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Meditations on Ortega y Gasset's Opaque Dogs: Hunting with Dogs as Inter-Species Affective Scaffolding

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Abstract
This paper interprets Ortega y Gasset's *Meditations on Hunting* (1972) through the concept of cognitive scaffolding in order to analyse the relationship between hunter and hunting dog as a form of inter-species distributed cognitive system. In recreational hunting, the hunter and the dog engage in a reciprocal process of mutual cognitive scaffolding that transforms both their capacities. It is further argued that this scaffolding also serves as a means of affective regulation, and that it is the affective rather than the cognitive features of the system that point to the function of the scaffolding. Namely, the production of an affective state in the hunter. We detail the ways in which the cognitive and affective features of the scaffold operate and interrelate. We then explore the role of the game-animal in the affective functioning of the scaffold and consider that the hunter-dog system might represent a harmful form of scaffolding.

Keywords Extended cognition · Affective scaffolding · Hunting · Dog · Ortega y Gasset

1 Introduction

We draw on Ortega y Gasset's description of hunting deer with dogs in *Meditations on Hunting* (1972) to inform our analysis of the human–dog relationship as a form of scaffolding. More specifically we use Ortega's account to explore the ways in which cognitive tasks are shared between the dog and the hunter, and co-ordinated action enabled by the regular exchange of information. Ortega's account of the hunter-dog scaffold problematises the use of phenomenological transparency as criterion for successful cognitive integration and foregrounds the role of phenomenological opacity in successful cognitive extension. It also highlights the ways in which the dog modifies and enhances the hunter's affective experience. We characterise the hunter-dog scaffold negatively as a form of scaffolded cognition that can cause or aggravate a variety of harms (Spurrett 2024, p. 831) to one or more of the agents involved in its operation.[1]

Following Perri (2020) we argue that hunting dogs represent animal biotechnology, a form of symbiotic animal scaffolding whereby "humans harness the innate properties of animals as technology" (2020, p. 8). As Ortega puts it, the hunter "asked for the [dog's] help" with regards to its detective instincts (Ortega y Gasset 1972, p. 76). The addition of the hunting dog to the practice of hunting extends the hunter's capabilities through integration with a distributed cognitive system. Such systems, whether they involve living or non-living technological resources, allow the user to engage with the world beyond their natural cognitive capacities. This hunter-dog relationship, we argue, can be analysed using the same evaluative criteria that one employs in assessing other technologies, all the more since the hunting dog has been "skilfully tuned" (Keil 2021, p. 103; Ingold 2000) through a variety of human interventions.

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Accounts of extended cognition challenge the conception of cognition as being a distinctively human characteristic situated in a single brain, and questions those attempts to define cognition simply in terms of reasoning and/or knowledge. Rather, cognition is posited by thinkers such as Clark (1998; 2008), Hutchins (1995), Gallagher (2005), and Sterelny (2010) as extending into the world and entailing the selective expansion of the agent's capacities. For Colombetti and Krueger the mind encompasses more than neural or bodily activity and draws upon aspects of the material environment, such as the technological (2015, p. 1158). According to Clark and Chalmers, "part of the world *is* (so we claim) part of the cognitive process" (Clark and Chalmers 1998, p 8), and cognitive scaffolding entails exploiting this external structure (Clark 2008).

Cognitive scaffolding can be produced or utilized through epistemic action (Kirsh 1995), and external tools may permit different forms of epistemic action (Flor and Hutchins 1991). In the latter case we find, for example, that the use of a tool may transform a task from elaborate computation to the simple manipulation of external devices (Hutchins 1995). Spurrett (2024, p. 821), following Griffiths and Scarantino (2009), but also Colombetti and Roberts' account of 'extended affectivity' (2015) and Colombetti and Krueger's postulation of scaffolded affect (2015), expands the account of extended cognition to incorporate both emotion and affect into the cognitive. This aligns with contemporary neuroscientific views that all neural processes combine both the 'cognitive' and 'emotional'. Spurrett further argues that such affectivity may be scaffolded in a way that is destructive or bad—in other words, against the interests of the agent. This view aligns with Aagaard's criticism of human–technology relations as necessarily cooperative and collaborative in cases of successful scaffolding, as Hutchins and Clark suggest (Aagaard 2021, p. 173). Spurrett argues that there are a variety of harms to which extended minds could be vulnerable, seeing hostility as an agent-relative property of an environment (Timms and Spurrett 2023). Our account of hunter-dog scaffolding expands this conceptual distinction in terms of affective scaffolding into the realm of animal biotechnology.

Keil's analysis of scaffolded cognition in sheepdog trials illustrates that the sheepdog's "cognitive limitations and inability to tackle the trial independently" are scaffolded such that "the human handler forms with the canine partner an interspecies cognitive system" (Keil 2015, p. 508). This scaffolding represents a form of extended cognition, whereby the capacities of the dog are scaffolded by capabilities of the handler. Keil shows how reciprocal information flows between human and dog coordinate action such that the cognitive processes involved in the trials are distributed across the system, suggesting a relationship of transparency. We problematise this notion of transparency, taken as the hallmark of successful cognitive extension by Stapleton & Thompson (2009), and Wheeler (2019), in our account of the hunter-dog dyad. While we do not reject the role of transparency altogether, we call for the recognition of opacity as a feature of certain instances of successful cognitive and affective extension.

We expand upon Keil's earlier account (2015) of scaffolded cognition to incorporate not just the specific cognitive features of the hunter-dog dyad, but also the affective dimensions.[2] This paper draws on Sterelny's framework of the scaffolded mind, which views cognition as situated in functional relationships between agents and environmental resources, to analyse the system formed by hunter and hunting dog in terms of affectivity. However, the affective dimensions of the hunter-hunting dog dyad can only be explicated through its function—the act of hunting, and more precisely that of killing game—as a necessary component of the scaffolded relationship. The postulation of cognitive and affective scaffolding as constitutive of the functional practice of hunting with a hunting dog illuminates aspects of the debate regarding scaffolded cognition (such as the transparency criterion). Moreover, it contributes to current debates on the normative considerations of scaffolded cognition—particularly where it is deemed hostile or bad, since on our account the game is considered as a functional component of the scaffolding.

In this paper we analyse the system formed by the combination of hunter and hunting dog in recreational hunting, explaining how the dog functions as a cognitive scaffold for the hunter. We exclude here other forms of hunting, such as subsistence hunting, as the ethnozoological and anthropological analyses of these forms of hunting reveal different implications for the human–dog relation. In the first section, we expand on the idea of the dog as cognitive scaffolding by exploring amplification–reduction features of the scaffold, and describing the role of non-transparent, opacity relations in the human–dog relationship. We then examine the affective dimensions of the hunter-dog scaffold and characterize this affective scaffolding as hostile due to the role played by the hunted animal in the scaffold.

[2] Keil highlights the importance of affectivity in describing the act of hunting, although he does not relate his analysis to hostile scaffolding. He does describe how the shared space between bodies is an "affectively charged space" that arises between "previous and emerging, co-constitutive affective states" (2021, p. 107). Moreover, he states that "the notion of an affective force that permeates and defines interactions offers novel ways to characterise and describe the sensual experience of different kinds of hunting" (2021, p. 111).

2 The Hunting Dog as Cognitive Scaffolding

Our analysis of the hunter-dog pairing as extended cognition is founded upon José Ortega y Gasset's oft-cited reflections on the nature and experience of hunting, *Meditations on Hunting*. Whilst generally taken to be an extended essay extoling the joys of hunting, we suggest that Ortega's work can and should be read as philosophical analysis. Ortega clearly intended his *Meditations on Hunting* to provide universal insights into the nature of hunting, both contemporary and historical. He states that "the mission of thought is to construct archetypes", ideal-types, which can serve as exemplars to clarify particular instances (Ortega y Gasset 1972, p. 87). Though there are significant differences between hunting with dogs and other forms of hunting practice, the more concrete examples that Ortega's analyses of hunting provide tend to refer to recreational stag hunting involving dogs, as well as beaters and shooters. This mode of hunting will be the focus of this paper. Despite this limited focus it is our hope that our analysis will be applicable *mutatis mutandis* to other forms of hunting that involve inter-species scaffolding.

Ortega's analysis of the experiential dimensions of hunting with dogs emphasizes the cognitive and affective interrelations of hunter and hunting dog, which we argue both implies and is strongly compatible with an understanding of the hunter-dog relationship as a form of cognitive and affective scaffolding. The conceptual framework of the extended mind thesis informs our analysis of Ortega's account (Menary 2010). We argue that Ortega characterises the hunter-dog dyad in hunting activity as a form of inter-species scaffolding, and furthermore show how it can be understood as constituting hostile scaffolding. In addition to enabling us to analyse hunting with dogs in terms of extended cognition, we suggest that Ortega's account also problematises the role of transparency in cases of, and as a criterion for, successful cognitive extension in current theorising regarding the phenomenological dimensions of extended cognition.

Ortega's account of hunting destabilizes and re-constructs the roles of hunter and game.[3] The act of hunting entails a relationship between "two animals of different zoological levels" whereby "two systems of instinct confront each other"—the hunter as aggressor and the game as defensive (Ortega y Gasset 1972, p. 75). Crucially, the scarcity of the animal underlies the "peculiar" task of hunting—there is a form of tracking and detecting involved that entails that what the hunter must fight most is "the beast's absence" (Ortega y Gasset 1972, p. 76). Ortega portrays the origins of hunting with dogs as a pragmatic response to persistent difficulties encountered in hunting practice, namely the scarcity of the game-species identified as desirable by the hunters, and the ability of those species to evade detection. The quarry are "masters at hiding" (Keil 2021, p. 102). The use of dogs in the hunt, on Ortega's account, was therefore a deliberate strategy to enhance the cognitive capacities of the hunter. The dog, with its different physical and sensory capacities, offered the hunter a means to locate the game-species more effectively and, equally importantly, to nullify the "countermeasures of evasion that the prey employs" (Ortega y Gasset 1972, p. 75). By making use of the dog's cognitive capacities, as external resource for the hunter's own cognitive processes, the hunter is able to operate within the environment of the hunting ground with augmented extra-sensory capabilities. Marvin thus describes the hunt as "a contest and competition between two sets of senses and sensing" (2005, p. 18).

This hunter-dog scaffolding is, on Ortega's account, the product of both selective breeding (in order to accentuate the traits deemed advantageous for hunting) and a training programme (enabling selective control over the dog's behaviour). Ortega sees this as a matter of modification rather than creation. "Man has done no more than correct the dog's instinctive style of hunting, molding it to the convenience of a collaboration" (Ortega y Gasset 1972, p. 76). Through training the hunter merely appropriates the instinctive hunting capacities of the animal.[4] They

[3] 'La pieza' or 'la presa' are the terms Ortega uses in *Meditations on Hunting*, translated as 'prey' in the 1972 Wescott translation. Ortega uses the term to refer to the game or quarry. The use of the term 'prey' in the translation might suggest that Ortega is making a naturalizing claim that humanity is a predator species and that human hunting activities are thus 'natural'. Ortega does not counterpose the term 'prey' against the term 'predator' in analysing 'sport' or 'utilitarian' (subsistence) hunting, but rather uses the term 'hunter'. And the term 'prey', when used in quotations from Ortega, simply refers to the hunted.

[4] It is important to note the specific way in which Ortega understands this 'appropriation' of the dog's abilities. The dog is invaluable to the hunter in the hunt because the dog by nature possesses certain sensory capacities that can act as a "counter-instinct" to the quarry's instinctive ability to avoid detection (Ortega y Gasset 1972, p. 76). And to maximise the dog's utility in the hunt, the hunting dog is further 'modified' to the hunter's convenience through training and the breeding of selected traits (Ortega y Gasset 1972, p. 80). Ortega does not wish to suggest that the traits that the hunting dog demonstrates are somehow primal or naturally occurring, and stresses that the nature of the modern hunting dog is an "artificial existence", in that it is the product of human artifice (Ortega 1972, p. 80). Indeed, at other points in *Meditations on Hunting*, Ortega describes very different forms of human–dog social relations with different modes of intercourse which further emphasise that the traits exhibited by dogs trained and bred for the hunt are by no means universal features of canines. Ortega further notes that the earliest records of human–dog relations in the Paleolithic indicate that the first domesticated dogs were not originally involved in human hunting activities (Ortega y Gasset 1972, p. 79). We are obliged to the first reviewer for drawing our attention to the importance of this point.

cognitively scaffold the dog's instinctive game-detecting behaviour. Thus, in the cognitive collaboration that the hunter-dog dyad represents it is the hunter, initially at least, that acts as the dog's cognitive scaffolding. During the process of training, however, the hunter may "become conscious of the ambivalent notion that they are participating in a world they cannot know" (Keil 2021, p. 106).

This scaffolding is apparent in the process of locating and pursuing quarry, although here the cognitive scaffolding operates in the opposite direction as well, in that the hunter uses the cognitive processes of the dog to complement their own. The use of the dog's quarry-detecting capacities (heightened senses of smell and hearing) significantly reduces the hunter's cognitive load.[5] And the use of the dog's speed and almost preternatural ability to anticipate and compensate for sudden alterations in the game's course vastly increases the hunter's ability to restrict the game's movement. With a suitably trained hunting dog the hunter is able to transfer their attention away from the dog to the game and its immediate surrounds. And by doing so the hunter is then able to scaffold the dog's cognition through commands, altering its behaviour in pursuit of the game in light of the hunter's superior strategic awareness of the situation. The extended system formed by the integration of hunter and dog thus operates as what Sutton, et al. term a *complementarity framework* with hunter and dog as equal but different components of a cognitive system (Sutton et al. 2010).

2.1 Amplification–Reduction as feature of the Scaffold

Ortega, though not employing the terminology of cognitive scaffolding, makes clear in his analysis of hunting that he views the hunter-dog dyad as operating as a collective cognitive unit. The introduction of the dog into hunting activity constituted progress in the art not because, as is typically the case with technological enhancements, it expanded the hunter's rational control over the environment. Rather it was progressive in that the hunter eschewed "the direct exercise of reason" and instead accepted its limitation by "placing another animal between his reason and the game" (Ortega y Gasset 1972, p. 76). Human cognition, surpassed in certain respects by the dog's cognitive capacities, chooses to engage with the hunt *through* the cognitive structures of the dog. The hunter's cognitive capacities are extended through the dog, and the dog's through the hunter in an ongoing and reciprocal fashion. These two very different cognitive systems are effectively integrated through the process of scaffolding to produce an interspecies distributed cognitive system.

A curious feature of this system, from the perspective of the human agent incorporated within it, is the particular way in which it mediates their cognitive capacities. It is typical to think of an agent's engagement with cognitive scaffolding in terms of augmentation, or at least some form of beneficial transformation of the user's cognitive abilities. While not denying *some sort* of augmentation or benefit, we draw attention to the fact that the transformation, firstly, augments the hunter's cognitive capacities in a very specific and delimited sense and, secondly, that this augmentation is offset by a corresponding reduction in capacity.

Hunting for sport is essentially a confrontation between two unequal species in which the hunter always has the upper hand, particularly if the hunter chooses to make full use of the options available to them. However, Ortega notes that the fundamental premise of hunting as sport is that the game has "free play" with regards to the hunter, and thus the hunter is compelled to avoid "the excess of his superiority" (Ortega y Gasset 1972, p. 97). The hunter therefore structures the hunting ground such that their capacities for action are limited. In effect, they accept a sporting 'handicap' by committing to not using all the assistive technological means at their disposal, such as using drones to drive or capture game. If hunting with dogs represents the perfection of the venatic art, as Ortega suggests, then it is not a perfection in terms of maximising efficiency in producing an outcome (Ortega y Gasset 1972, p. 77). Rather it is the perfection of a mode of praxis using a deliberately less than optimal (from an efficiency perspective) form of 'technology'. The hunter, Ortega writes, "restrains his destructive power, limits and regulates it… in the venatic dealing with animals he leaves them, in effect, free to play their own 'game'" (Ortega y Gasset 1972, p. 50).[6]

The extended cognitive system of the hunter-dog dyad still represents an augmentation, in that the hunter can scaffold their cognitive processes on the dog's nonhuman physical and cognitive abilities to their advantage in the hunt. Keil suggests that "for [the hunter] to locate [the quarry] through smell is to represent his perception of this place through a sensory register not actually available to him" (2021, p. 102). However, we wish to highlight that this augmentation follows a significant reduction in the hunter's potential cognitive capacity that is a necessary, rather than contingent, feature of the scaffold. A perceptual consequence of this reduction is one that sees the environmental totality transformed into a 'hunting ground', a landscape materially and behaviourally organised so as to present only those

[5] Keil, in this regard, highlights the "canine's extraordinary capacity to sense scent", relating smell to a dynamic and elemental dimension of the hunt (2021, p: 103, 104).

[6] By 'game' Ortega means the hunted animal's free exercise of its particular set of defensive instincts (Ortega y Gasset 1972, p. 51).

features of importance to the hunt.[7] Other ways of perceiving the environs and the quarry are foreclosed in return for an expanded and focussed sensitivity to the environment *qua* hunting ground. Ortega argues that hunter chooses to experience the world *through* the hunting dogs and the quarry. He writes that, "we have to seek the company of the surly beast, descend to his level, feel emulation towards him, pursue him. This subtle rite is the hunt. When one is hunting, the air has another, more exquisite feel as it glides over the skin or enters the lungs, the rocks acquire a more expressive physiognomy, and the vegetation becomes loaded with meaning" (Ortega y Gasset 1972, p. 123).

Ihde (1979) suggested that an invariant feature of all human–technology relations is what he terms an *amplification–reduction* structure. Ihde argues that the use of instruments is always non-neutral, in that use transforms the user's experience. Whilst the amplification feature of technologically-mediated experience is typically foregrounded, the amplification often being the desired function of the technology, Ihde points out that "with every amplification, there is a simultaneous and necessary reduction" (1979, p. 21). For instance, using a telephone amplifies my ability to converse with someone far from my present location, whilst at the same time reducing the experiential depth and consequently removing many bodily dimensions (gestures, expressions, etc.) typically found in conversations. Such reductions are typically unintended side-effects of technology use, while the hunter-dog scaffold's amplification–reduction structure has reduction as a deliberate feature. Marvin notes in this regard that the "primary interest of most sport hunters… is with an immersion into the very difficulty of bringing about an encounter with the animal, with the experiences generated by the act of hunting and with the pleasure and satisfaction that comes from successfully overcoming these *self-imposed restrictions and difficulties* [emphasis ours]" (Marvin 2005, p.17). Indeed, we suggest that the reduction is the desired function of the scaffold, in that it is a self-imposed restriction, with the amplification operating as a partial compensation for the reduction.

It is for this reason that Ortega states that, "hunting is an *imitation* of the animal" (emphasis ours) (Ortega y Gasset 1972, p. 124). By this he means not that the hunter's behaviour is a recapitulation of behaviour of predator species in the hunt, but rather that the hunter in hunting chooses to replicate the senses and capacity for action of the animal. And in so doing, to reduce significantly their species-typical range of cognitive capacities and capacities for action whilst simultaneously adding new cognitive and action potentialities *through* the animal involved in the hunt. It is a choice on the part of the human to 'co-exist' with the animal. And, Ortega notes, "to co-exist more largely with the animal, the only thing that I can do is to *reduce my own life ... becloud my intelligence* and befuddle my common sense until I become almost another animal" (emphasis ours) (Ortega y Gasset 1963, p. 88). The hunter-dog scaffold operates then as a *reduction–amplification* structure.

2.2 Transparent and Opaque Scaffolding

Considering a living creature as a form of technology enables us to see more clearly the ways in which this form of cognitive scaffolding is instituted and operates. It also problematises the role of transparency as a phenomenological feature in successful cases of cognitive extension. Literature on cognitive scaffolding tends to consider transparency to be the hallmark of successful integration of an external device into an extended cognitive system. Clark describes what he terms 'transparent technologies' as "those tools that become so well fitted to, and integrated with, our own lives and projects that they are… pretty much invisible-in-use… There is no merger so intimate as that which is barely noticed" (Clark 2003, pp 28–29). Transparency, in this instance, represents the incorporation of an external device into a system such that the user need no longer attend directly to the device in order to employ it. The user now seamlessly experiences the world through the device, rather than experiencing the device itself.

Thompson and Stapleton (2009) go so far as to propose a 'transparency restraint' on extended cognition. They state that, "for anything external to the body's boundary to count as a part of the cognitive system it must function transparently in the body's sense-making interactions with the environment" (Thompson and Stapleton 2009, p. 29). Again, as with Clark, the operative idea here seems to be that if one has to attend cognitively to an external resource then the relationship between the agent and the bio-external resource is not an 'intimate' merger but a deliberative transaction with an artefact outside oneself. The engagement with the artefact becomes the agent's experiential focus, rather than with a feature of the world experienced through the artefact employed. Whilst we agree that transparency can be an important feature of successful integration, we do think clarification is necessary regarding both the totalizing nature of the transparency constraint, and the characterization of transparency that it operates with.

Characterising the subjective experience of incorporation as a transparency relation does pick out salient experiential features. However, there is some ambiguity on Thompson and Stapleton's account regarding when this transparency is to be understood to have been instantiated. It is clear

[7] Also called *meshwork* (Ingold 2011; Gieser 2021, p. 123).

from their account that transparency is meant to occur when the agent incorporates the external device into their body-schema.[8] And thus that these occurrences are instances of what Ihde (1979) termed *embodiment relations*, human–machine relations in which the technology employed is absorbed into the user's experience of themselves. And in which, having been absorbed, the user's point of experiential contact with the world is extended through the technology such that their "mind-world boundary" no longer begins at their skin but rather at the artefact's point of contact with the world (Wheeler 2019, p. 862). Phenomenal transparency, Ihde suggests, typifies human–technology relations in which human sensorimotor capacities are extended.

Following Smart et al. (2022) we do not view transparency as playing either a causal or constitutive role in cognitive extension, but rather as *an* indicator of successful cognitive integration. We also hold that phenomenal non-transparency is not necessarily an indicator of unsuccessful cognitive integration. Rather transparency is the hallmark of one mode of integration. And non-transparency is an indicator of unsuccessful cognitive integration in this mode only. There is however another mode which does not feature transparency but, we argue, still represents successful cognitive integration. Clark (2003), as a counterpoint to his transparent technologies, makes an interesting reference to what he terms 'opaque technologies', technologies which do not exhibit what Smart et al. term phenomenal transparency in their use (Smart, et al. 2022, p 35). Clark states that:

> "An opaque technology... is one that keeps tripping the user up, requires skills and capacities that do not come naturally to the biological organism, and thus remains the focus of attention even during routine problem-solving activity. Notice that 'opaque,' in this technical sense, does not mean 'hard to understand' as much as "highly visible in use" (Clark 2003, p 37).

Whilst we retain Clark's characterisation of these technologies as opaque, we argue that such technologies can and do feature in successful instantiations of extended cognitive systems. And that the extended cognitive system formed by hunter and dog represents just such an instance. Returning to the example of the blind man's cane, when the user is suitably adept in the cane's use they incorporate it into their bodily-experience and experience the world *through* it. This is a transparency relation. However, with other sorts of relations with devices, such as an ebook reader, a different relation holds. I might be particularly adept at using the ebook reader, e.g. am familiar with its controls, can navigate its contents easily, etc. However, no matter how expertly I employ the device, at no point will it become incorporated into my body-schema, nor will it become transparent. This is because it is a different kind of device. One, which when it functions well, is designed to remain opaque to the user. Ihde terms such relations 'hermeneutic'. We, following Clark's example, refer to them here as opacity relations. With such devices one does not experience the world through the device, but rather experiences the device as the focal point of attention. It is precisely their opacity that enables the possibility of 'reading' such devices, of interpreting them (Du Toit and Swer 2021). In such cases the ending of the mind-world boundary at the skin is not an impediment to successful cognitive extension, but a necessary feature of their use as a bio-external resource and their incorporation into an extended cognitive system.

If the transparency constraint holds then only components that exhibit transparency can count as part of an extended cognitive system. We suggest that this is a rather arbitrary criterion for successful cognitive integration. Furthermore, it would exclude artefacts that seem to be *prima facie* instances of successful integration, such as Otto's notebook, an ebook reader, or a BrailleNote Touch, and yet which exhibit opacity rather than transparency. We argue instead that whilst transparency is a common feature of many instances of device integration into an extended cognitive system, its presence or absence cannot serve as a universal arbiter of successful integration. And that an awareness of opaque modes of integration can provide further nuance to the understanding of the relationships presented by agents engaging with their environment.[9] We further argue that the type of distributed cognitive system found in the hunter-dog dyad is an instance of cognitive extension that involves such phenomenal opacity.

[8] Again the examples given to explain the nature of this integration are not enormously helpful. The classic example of a blind man's relations with his cane are pointed to as an instance of a transparency relation, whilst Sweeney Todd's relations with his scissors are not. Though there is not space to discuss it here, the notion of incorporation is problematic. As De Preester and Tsakiris demonstrate (2009) the limits of the body schema, the internal body-model of an agent, are not particularly elastic. Thus bio-external resources are seldom 'incorporated' into the body-schema, in the sense of being absorbed seamlessly/transparently into the schema such that it is viewed by the agent as an integral part of that schema and not just as a bio-external resource. We suggest that, phenomenologically, incorporation in the case of transparent cognitive extension through a bio-external resource involves incorporation in the more mercantile sense of the formation of a new corporation. The agent employing the bio-external resource successfully constitutes a new extended body, with a new extended body-schema composed of the agent's original body-schema plus the bio-external resource.

[9] We argue that transparency and opacity relations are to be found in any context in which an agent's encounter with the world is mediated by an instrument. And that this applies regardless of whether the instrument is a purpose-built artefact, like the blind man's cane, or whether it is an organism (human or animal) used as an instrument, like Keil's sheepdog or Hutchins's socially distributed cognitive systems (Keil 2015; Hutchins 1995).

Central to Ortega's account of the relations between hunter and hunting dog, and between the hunter-dog dyad and the quarry, is his communicative understanding of animal corporeality. Our relations with the hunting dog and the quarry are for Ortega social relations. He states that, "the animal and I are 'we' because we mutually are to each other, because I know very well that in response to my action on the animal the animal will respond to me" (Ortega y Gasset 1963, p. 87). The capacity that the hunter and the dog exhibit for mutual cognitive scaffolding is based upon their capacity for "inter-existing". And this in turn rests upon the fact that the body of the dog and the body of the human act as an "expressive field" (Ortega y Gasset 1963, p. 93). Their bodies do not just move, but continuously signal an interiority to the observer. What these signals of an indirectly perceived interiority signify is, of course, a matter of interpretation (and misinterpretation). However, the very understanding of the human–animal relations as the reciprocal exchange of expressive indicators which stand in need of interpretation does foreground the non-applicability of phenomenal transparency in this instance. The interpretation of the hunting dog's expressive field in the hunt is central to its role as cognitive scaffolding. Its non-transparency, the fact that we have to foreground the bio-external resource in our successful dealings with it, is an essential feature. The opacity of the bio-external resource, in this instance, is essential for it to serve as an informational resource.

Ortega's description of hunting with dogs foregrounds the altered perception of the hunter in their engagement with the scaffolded environment. Aware of the approach of the dogs to their position, the hunter is able to focus on the immediate environs. Their awareness "spreads out over the hunting ground like a net, anchored here and there with the fingernails of his attention" (Ortega y Gasset 1972, p 78). Having distributed the cognitive effort of locating the game to a large degree to the dogs, the hunter is able to develop a strategic awareness of the environment, one marked by an enhanced sense of their own possibilities for action within the space. The contents of the hunter's spatial representation of the environment are changed. They exhibit a "latent restlessness" and present themselves within what Ortega terms 'pragmatic fields' as dynamic entities affording certain potential actions to the hunter-dog dyad and the quarry (Ortega y Gasset 1963 p. 82).

Upon locating the game, the dog barks to alert the hunter. Ortega notes that the dog's bark, and its frequency and intensity, is itself a form of communication. It is the product of the continuous scaffolding of the dog's development during training. As a consequence, the hunter is able to mediate the dog's relationship with the game during the hunt through the issuing of vocal commands. And the dog, in turn, is able to communicate with the hunter. The two parties are thus able to exchange informational resources. Furthermore, Ortega writes that, "this bark is not merely a point of noise that appears at a spot on the mountain and remains there—rather it seems to extend rapidly in a line. We hear, and almost see, the barking run loose, weaving swiftly through space like an erratic star" (Ortega y Gasset 1972, p 78). The barking of the dog is transformed into spatial coordinates and a trajectory appears upon the hunter's mediated perception of the hunting ground, in turn directing their attention to the probable location of the game. This communicative interaction enables the formation of a shared situational awareness.[10] The hunter is then able to communicate with the dog, to further coordinate its movements through the cognitive effort of the hunter. The hunter-dog unit is therefore able to act in concert in order to achieve its objective, and together constitute an extended cognitive system. The coordination of the hunter and the dog's movements, and the transfer of information through barks and commands that enable the detection and pursuit of the game, represent a case of successful cognitive integration. But importantly, the nature of the relation between the components of the extended cognitive system is, of necessity, one marked by phenomenal opacity.

3 The Hunting Dog as Affective Scaffolding

Here we extend the discussion of the hunting dog as cognitive scaffolding by analysing the affective dimensions of the relationship between hunter, hunting dog, and game. Colombetti and Krueger (2015) argue, following on from Sterelny's framework of the scaffolded mind and other "situated" approaches to emotion such as Griffiths and Scarantino's (2009), that the environment in its broadest sense also scaffolds affectivity and not merely cognition (Colombetti and Krueger 2015, pp. 1159–1160). For example, wearing a business suit to a meeting serves to scaffold affectivity (such as comfortableness or professionalism) not merely for the person wearing the clothes but also for others in the environment they inhabit (Spurrett and Brancazio 2023). Emotions are understood as culturally scaffolded "social signals designed to change the behavior of other organisms" rather than internal states of an organism that designates the significance of situations (Colombetti and Krueger 2015: 1160; Griffiths and Scarantino 2009). The situated view of affectivity, as discussed by Colombetti and Krueger suggests that both sociocultural norms and the concrete, material context inform both passive bodily and experiential changes while resulting in the active modification of one's environment for

[10] Ingold describes how hunters dwell within a 'weather-world', an awareness that stitches together weather, landscape, and quarry (Ingold 2015; Gieser 2020; Keil 2021). Shroer similarly describes the coordination between human and nonhuman as attunement to a 'mood' that fills the space around them, allowing for the negotiation of their relationship (Shroer 2019).

the sake of "sustain[ing], amplify[ing], or dampen[ing]" the individual's affective life itself (2015, p, 1160).

In other words, human affectivity is a situated phenomenon in the world. Our perceptual relationship with certain objects and spaces (Caravà & Benenti 2024, p. 1) is thus regulated by affective affordances—tools for regulating affective states—in the material environment. These affective affordances, which Caravà & Benenti describe as "opportunities to elicit, feel, and regulate our emotions" contribute "to eliciting, shaping, and guiding emotional experiences and behaviors" (2024, p. 1). Furthermore, these states arise through the active manipulation of the world to generate 'affective niches' what Colombetti and Krueger describe as temporary "instances of organism–environment couplings (mutual influences) that enable the realization of specific affective states" as part of one's habitual dealings with the world (Colombetti and Krueger 2015, p. 1160).

We have argued that hunter-dog dyad represents not just an extended cognitive system that is integrated through mutual scaffolding, but also one that operates as affective scaffolding. Our claim here takes two forms. First, that the affective experience is central to the integration of the extended framework in this instance. And second, that the primary function of the hunter-dog dyad is affective regulation. Regarding the first, we follow the suggestion by Candiotto and Stapleton (2024) that the qualitative dimension of a user's integration with cognitive scaffolding is central to the understanding of integration. It is not merely the ability to use a scaffold effectively that marks successful integration, but rather the alteration in the user's feeling of agency. Through a process of what the authors term 'productive struggle', the user develops a feeling of enhanced action potential within a certain environment.[11] And as a result of this altered sense of agency, the user becomes aware of novel possibilities for action, altering pragmatic fields in their surroundings in a way that affords new avenues of engagement.

We noted earlier the experiential transformation of the hunter's spatial awareness of the hunting ground due to reciprocal cognitive integration with the dog. Ortega underscores the affective dimension of this transformation.[12] He states, "There is a universal vibration. Things that before were inert and flaccid have suddenly grown nerves, and they gesticulate, announce, foretell" (Ortega y Gasset 1972, p. 77). The hunter experiences the world through the scaffolding as a dynamic space filled with possibilities for action and one in which they possess enhanced agential potency. Ortega stresses that from the hunter's perspective nothing has literally changed in their environment. Rather the change is something that "he seems to be feeling, though not actually seeing" (Ortega y Gasset 1972, p. 78)—it is an affective alteration in the hunter's experience of agency. And this hunter-dog relationship as a product of the training process exhibits the features one would typically expect to find with affective scaffolding, such as trust and individual attunement (Colombetti and Krueger 2015:1160), although these features are in this case shared between both human and canine agents. This scaffold represents a dynamic affective engagement with the environs, an "*active structuring* of the environment by an agent… with the aim to achieve relational goals and to effect changes in the world that are conducive to the agent's favored course of future action and experience" (Slaby 2016, p. 4).

Our second claim is that the primary function of the hunter-dog dyad is affective regulation. By this we mean that the hunter-dog scaffolding is the product of a conscious intention to actively modify the environment for the sake of affective experience. Ortega is again helpful in foregrounding this aspect of the hunt. Whilst one might imagine that the objective of the (sportive) hunter is the death of the game, in actuality "the death of the game is not what interests him… what interests him is everything he had to do to achieve that death—that is, the hunt" (Ortega y Gasset 1972, p. 96). To be more specific, it is the *experience* of the hunt that is the objective. The sense of agential potency that marks the successful integration with the hunter-dog dyad *is* the affective purpose of the scaffolding just as much as is the pleasure received in exercising this potency by exploiting the new possibilities for action that the scaffolding discloses.

A further feature of the affective function of the scaffold is rather singular. This system of extended cognition is constituted by more than one mind, and information is communicated between them in the form of mutual scaffolding. It is also the case that informational and behavioural cues from the one bring about affective alterations in the other. The practical coordination of the hunter and the dog in the hunt is inextricably linked to the affective coordination of both agents. The dog responds to changes in the tone and tempo of the hunter's instructions as well as the commands. And the hunter empathically responds to alterations in the dog's signals that indicate levels of excitement and activity. Ortega writes.

> "The dogs are hard to restrain; Their desire to hunt consumes them, pouring from eyes, muzzle, and hide. Visions of swift beasts pass before their eyes, while,

[11] Candiotto and Stapleton also view the phenomenological transparency of the scaffold to be a key indicator of successful cognitive integration. We reiterate our concerns with the overly general use of the concept of 'transparency' in understanding the experience of integration.

[12] Other commentators describe how, through the mutual attunement of hunting dog and hunter, an "atmosphere builds" (Despret 2013; Keil 2021: 108; Lorimer et al. 2017).

within, they are already in hot pursuit" (Ortega y Gasset 1972, p. 78).

This rather poetic description draws a clear link between the affective state of the dogs (at least in terms of their emotions as interpreted by the hunter) and the environment. Various aspects of the environment as meshwork—such as objects, enabling and disenabling features, and topographical layout—are characterised not just in terms of a heightened praxical awareness of the opportunities that exist in the environment, but by affective affordances. Marvin concurs, stating that "[t]he Huntsman… must understand or sense what is going on between his hounds, he senses their sensing, and he uses his senses to remain connected with them… He must both respond to them and ensure that they respond to him" (Marvin 2005, p. 20). The hunter, cognitively scaffolding and scaffolded by the dog, experiences a significantly modified experience of agency in the environment through the empathic connection between the affective state of the dog and their own affective state.

3.1 Scaffolding the Game

The focus on the hunting dog as scaffolding for the hunter's cognitive capabilities and affective capacities risks obscuring a key node in this scaffolded framework of relationality, namely the hunted animal. Gieser, like Ortega, places emphasis on the close bond between the hunter and game animal (Gieser 2017; Gieser 2018, p. 134; Ortega y Gasset 1972, p 104). It is this last node, the game, that completes the circuit between hunter and hunting dog. The hunter-dog scaffold modifies the environment such that the targeted animal manifests a certain type of behaviour. And it is upon the production of such behaviour by the game that the affective state that arises through the scaffolded act of hunting is manifested for the hunter and hunting dog. Through the enactment of coordinated behaviour a *common situation* is created with hunter, hunting dog, and game as acting co-participants whereby it is "the agency not just of the hunter but of the animals as well that 'make' the situation" (Gieser 2018, p. 134).

The situation thus entails the opening up of specific pragmatic fields, or new functional relationships, for the hunter, hunting dog, and game. These nascent affordances sketch the possibility for action of an agent in an environment while inclining the hunter towards the successful exploitation of the expanded field of action (as an inherent characteristic of the scaffold). Ortega argues that.

> "Man lives in an immense ambit—the world, his world, the world of each, occupied by "fields of *pragmata*" more or less localized in particular regions. And each thing that appears to us, appears to us as belonging to one of these fields or regions. Hence, no sooner do we become aware of it than, like a flash, there is in us as it were a movement that makes us refer it to the field, region, or let us now say, *to the side of life* to which it belongs" (Ortega y Gasset 1963, p. 81).

The pragmatic field of hunting with dogs directs the hunter towards a specific successful agentive action—hunting is a goal-directed activity that results in the death of the quarry. Ortega distinguishes hunting for food (subsistence or 'utilitarian' hunting) from sportive hunting (Ortega y Gasset 1972, p 96). In both cases, however, the death of the game is the outcome. In the case of the subsistence hunter, the hunter's objective is the death of the game, with all other aspects of the hunt merely being means to this end. For the sportive hunter, it is the experience of the hunt as diversion that is the hunter's objective, with the death of the game being a means to this end. However, without "death… there is no authentic hunting" (Ortega y Gasset 1972, p. 96).[13]

Central to the experience of hunting is the manipulation of the environment such that the hunted animal produces an affectively stimulating performance, whether in death or in flight. Ortega describes the moment in the hunt when the dogs drive the game into the hunter's line of sight:

> "The game is seen, raised in dizzying flight like wind on the wind. The entire countryside is polarized, seemingly magnetized. The fear of the pursued animal is like a vacuum into which everything in the environs is thrown… The fear which causes the beast to flee absorbs the entire countryside, suctions it, carries it racing along behind, and even the hunter, outwardly quiet, is inwardly moved, his heart racing wildly" (Ortega y Gasset 1972, p 78).

Ortega's account identifies key affective features of the operation of this scaffolded experience. Namely, the desired behaviour of the game. Hunting with dogs compels the game to exhibit flight behaviour in response to the threat perceived. Ortega indicates that the hunter responds affectively to these behavioural cues by the quarry in several ways. Firstly, there is an affective appreciation of the aesthetics of the hunt. Marvin (2003) states that fox hunting entails specifically an aesthetic performance, choreographing animal interactions for a specific experience, and Keil describes how hunters show an appreciation for the "multi-sensual, multispecies composition of the recreational practice" (2021, p. 106). Ortega sketches in detail the tableau formed by the parties involved in this 'performance':

> "Suddenly, on the spine of a low ridge the stag appears to the hunter; he sees him cut across the sky with the

[13] One exception Ortega mentions, unfavourably, is photographic hunting (Ortega y Gasset 1972, p. 94).

> elegant grace of a constellation, launched there by the slender springs of his extremities. The leap of a roe deer or stag—and even more of certain antelopes—is perhaps the most beautiful event that occurs in Nature. He lands again at a distance and accelerates his flight, because the snorting dogs are at his heels—the dogs, the abettors of all this vertigo, that have transmitted their delightful frenzy to the mountainside and now, in pursuit of the game, tongues hanging out, bodies stretched to their full length, gallop obsessed..." (Ortega y Gasset 1972, p. 79).

In addition to the gratification derived from an appreciation of the aesthetics of the hunt, as Ortega's account indicates, there is also an empathic dimension that is central to the hunter's affective experience. The hunter 'reads' the bodily comportment of the game as indicating a state of fear to which they respond emotionally. Each of the agents in the scaffold exchanges affective information: the baying of the dogs, the fear of the game that "carries the faculties of the beast to their greatest performance" (Ortega y Gasset 1972, p 79). We argue that the hunter's affective state is a response to its empathic reading of the game under these conditions, supplemented by their reading of the dogs. It is for the production and management of this affect-producing game/dog behaviour that the scaffold was designed. The scaffolded relationship bestows upon the hunter a sense of empowerment through familiarity with the scaffold, as the hunter's hermeneutic relationship with the hunting dog becomes stabilized through training of the animal and understanding of the dog's communication with the hunter (the barking which transforms the hunting ground into a 3-dimensional space with a projected line of significance). This sense of empowerment includes a sense of ownership of the hunt in that the hunter controls its potential outcomes and can compel the game to demonstrate behaviour that produces the desired affective state.

3.2 On the Hunt for Bad and Hostile Scaffolding

The human–dog dyad, when successfully integrated, operates as cognitive and affective scaffolding which regulates the user's affective states and modifies their agential potency and possibilities for action in a given environment—but the inverse is also a salient feature of the human–dog scaffold, whereby the dog itself is affectively scaffolded by the human's interaction. The perspective on the world and the possibilities for action enabled by this interspecies cognitive and affective scaffolding are open to ethical contention, and in this section of the paper we consider features of the normal operation of the hunter-dog scaffold that could be viewed as having bad or negative outcomes.

The hunter-dog scaffolding exists to kill. Regardless of one's view on the morality of sport hunting, it is a fact of the matter than a successful hunt ends with the death of an animal. And it is also a fact that the primary user of the scaffold is responsible ultimately for that death. Ortega stresses this point, saying that the "hunter does not just come and go… urging on his dogs; rather, in the last analysis, he kills. The hunter is a death dealer" (Ortega y Gasset 1972, p. 87). If one views the function of the scaffold to be the extension of the hunter's cognitive capacities, then the capacities extended are those that facilitate the killing of the game animal. Or if one views the function of the scaffold to be the production of a certain affective experience, then it is the case that the death of the game plays a necessary part in the production of that affective state. In that the affective experience sought through use of the hunter-dog scaffold is the experience of another's plight and fear whilst attempting to avoid death, the affective state of fight or flight that arises in the quarry. This delimitation of action on the part of the quarry constitutes a form of hostility and violence.

In the preceding section we discussed the affective feedback loop between the hunter, dog, and game. Given that the affective state produced by this feedback is the intended purpose of the scaffold, this affective feedback can be viewed as positive and necessary for successful scaffolding. At the same time, we note a form of negative affective feedback that occurs at the conclusion of the hunt when the animal is killed. The hunter, through their empathic connection with the game, experiences a moment of "disgust and terror" at the termination of the life of the animal (Ortega y Gasset 1972, p. 91). Disgust and terror manifest through the embodying of an intense, visceral sensation that may be described as nausea—though such bodily reactions may be actively suppressed in seasoned hunters.[14] The nausea of the beginner hunter entails a discomfort, a tightening in the stomach that rises to the throat. Heaviness in the chest. Such bodily reactions may be compounded by the hearing of primal sounds and struggling, and the sight of the blood of the hunted animal, or its scent (Keil 2021, p 98).[15]

This affective state, Ortega argues, is an inevitable feature of the experience of the hunt and is thus an inevitable

[14] Ortega stress the viscerality of the hunter's reaction to the killing, stating that it occurs "before and apart from any moral or even compassionate reaction" (Ortega y Gasset 1972, p. 90.) He describes a feeling of disgust that degrades and debases the killed animal, the hunter, and the site of the kill. "Hunters who read this", he claims, "will remember this *primary sensation* (emphasis ours), so often felt, when at the end of the hunt the dead game lies in a heap on the ground, with dried blood here and there staining plumage and pelt" (Ortega y Gasset 1972, p. 90).

[15] In Keil's analysis of hunting wild pigs with dogs, both tension and anticipation are identified as definitive affective states that create the atmosphere of the hunt (2021, p. 107).

feature of the scaffold. The successful integration of the affective scaffolding regularly produces, as an unintended consequence, a negative affective experience. This affective 'echo' that results from the ending of the hunter's empathic connection with the game has a rather ambivalent status. On the one hand, as an undesired affective experience that results from the scaffolded hunter-dog-game process, it is negative. On the other, the unease felt at the taking of another's life seems to point to a way in which the negative affective function of the scaffold could provide occasion for the hunter to reconsider their practice, and thereby their continued use of the scaffold. However, as Keil notes in his account of a pigdogging hunt, even a seemingly offensive smell—such as the pungent odour of a male wild pig—and its related affective response on the part of the hunter may take on an ambiguous character that extends beyond disgust in the act of hunting (2021, p. 101).

Of course, the empathic recognition of the game as another consciousness, which we argued is central to the affective function of the hunter-dog scaffold, does not necessarily entail the recognition of that consciousness as worthy of moral consideration (while still not wishing the game to suffer). Empathy can, but does not necessarily, lead to sympathy (Gieser 2008). Ortega notes that the negative affect is swiftly displaced by a positive one as the flow of blood "intoxicates, excites, maddens both man and beast" (Ortega y Gasset 1972, p. 91). The hunter's scaffolded connection with the game, which produced the feeling of nausea, is subsequently cancelled out by their affective connection with the dog and shared exuberance at the successful kill. It is an affective characteristic of the scaffold that the killing of the quarry does not end with the sense of nausea, but is transformed as part of the functioning of the scaffold to a sense of achievement (exuberance) since the conclusion of the hunt has been successfully reached. One node of the scaffold has been fundamentally altered—but corpsification has not destroyed the presence of the quarry—and affectivity has resultantly taken on a different character. The hunter's feeling of nausea, through repeated use of the scaffold and the resultant familiarity, is recognised as a preliminary affective stage to be passed through on the way to an affective 'high'.[16]

One may ask whether being integrated into the hunter-dog scaffold is of overall benefit to the dog, and whether its participation serves the interests of the dog. The hunter's use of scaffolding permits the sharing of cognitive/affective work with the dog, thereby exploiting the dog's cognitive processing to the advantage of another. In this regard Ortega describes the refinement of those instincts "which man needs and tries to select in breeding" for collaborative hunting (Ortega y Gasset 1972, p. 80). The negative impact of selectively breeding certain types of dogs specifically for hunting suggests that the practice has moral implications that relate to the hostile scaffolding under discussion. Firstly, the dogs cannot decide to disengage themselves from a practice that is morally evaluable. Furthermore, certain dogs are selected, their biological features modified or enhanced through artificial selection, with the specific intention of making them more efficient in a killing practice. Harm to the dog may thus result from the amplification of certain features through breeding. One could further generalize a number of situations in which the scaffolded behaviour of the hunting dog can be directly detrimental to its health. Ortega notes that hunting dogs have difficulty restricting themselves, a feature which is exploited by the hunter for practical ends. However, such an exaggerated drive may be described as a hostile feature of the scaffold since hunting dogs may have the bravado to confront dangerous game animals like bears or wild pigs, they may pursue farm animals and be shot, or may get lost during long distance tracking. Dogs may thus be at higher risk of severe injury or death when they are used to hunt more dangerous game, such as bears. They may be at higher risk of injury from firearms—whether accidentally or intentionally—and they are exposed to a higher risk of disease and parasites in the hunting environment. In short, the type of work that the hunting dog is engaged in carries considerable risk of harm to the animal.

One might also detail instances where the process of scaffolding can be directly harmful to the dog. It is not uncommon for some owners of hunting dogs to restrict the diet of the dogs before a hunt in order to incentivise them. Or for owners to train the hunting dogs using methods that employ punishment or other forms of negative reinforcement, such as electronic shock collars. Interventions like 'stock-proofing' see the dogs verbally or physically 'corrected' when they show a drive to chase an animal that is not the game (such as chickens or goats) (Keil 2021, p. 103). Hunting dogs can be housed in bare single kennels, which in turn can contribute to high levels of stress and frustration (Orr et al. 2019, p. 6). They can also be transported for long periods of time in metal cages mounted on the backs of vehicles with extremely limited space to move, exposing the dogs to the risk of dehydration and heat exhaustion (Orr et al. 2019, p. 7) Hunting dogs are also reported to sometimes be abandoned or killed when they grow too old to hunt. These instances, collectively or individually, could all be taken as evidence for the hostile nature of the scaffolding.

However, although we hold that a case could be made for considering the hunter-dog dyad as hostile scaffolding, such a case is far from clear cut. Even if one allows that all the harms described above are present in all instances of hunting with dogs, which itself is highly improbable given

[16] On this, Keil notes that the "hunter is prepared from previous hunts" (2021, p. 107).

the variety of types of hunting engaged in with dogs, the different types of game, the different hunting environments, and the different types of owner, the question remains as to whether these features are necessary or contingent features of the scaffold. And thus whether the hunter-dog scaffold, if it is hostile, is necessarily so. In other words, could we imagine circumstances in which the harmful features of the scaffold were ameliorated or addressed by certain measures (for instance, by training the hunting dogs through non-aversive methods, using positive rather than negative reinforcement, etc.) such that hunting with dogs became non-hostile from the dog's perspective? If one's basis for viewing the hunter-dog scaffold as hostile was the sum of harms done to the dog, then addressing those various harms would render the scaffolding non-hostile. Such that one might hold that the hunter-dog scaffold is (or at least under certain circumstances can be) hostile to the dog's interests, but it is not necessarily so. Alternatively, if one views the training and breeding of dogs for hunting as harmful in and of itself, in that it denies the dog's agency or instrumentalises another living being perhaps, then it is hard to imagine any circumstances in which the hunter-dog scaffold could be viewed as anything other than hostile. The scaffold would then be considered necessarily hostile to the dog's interests. Again, such a case, that it is ethically problematic that hunting dogs are "commodified, owned and killed according to their usefulness or otherwise to humans", could be made (Tyler 2021, p. 138). But such a case would also have to reckon with the fact that many of the factors that make the hunter-dog scaffold hostile can also be present in many other forms of human–animal relations. The physical demands and risks placed upon the hunting dog mirror to a certain degree those placed upon the sheepdog, or other types of working dog. The use of aversive training methods, and selective breeding for specific traits, is common with breeds of dog typically kept as domestic pets.

Regarding the last point, in conversations with hunters one often hears it said that the hunting dogs enjoy the experience of the hunt and, by engaging in hunting activity, are doing what comes naturally to them. For example, some hunters claim that "chasing animals is deeply fulfilling for the dog" (Keil 2021, p. 103). Orr also notes that, increased risks aside, hunting dogs "likely experience positive affective states during hunting as a result of their strong prey drives" (Orr et al. 2019, p. 7). Ortega however makes the following rather pertinent observation about the hunting dog–human relation:

> "From a zoological point of view, the domesticated animal is a rather degenerate one… [Through domestication] the beast loses not a few of its instincts, even though he refines others which man needs and tries to select in breeding. The space left in the animal's life is filled by teaching and training. But generally this is something that is only trivially and superficially understood. Through training man introduces certain forms of human conduct in the animal. That is, domestication partially de-animalizes and partially humanizes the beasts. That is to say *the domestic animal is an intermediate reality between the pure animal and man*, which in turn is to say that *something like* reason operates in the domestic animal" (Ortega y Gasset 1972, pp 80–81 - emphasis in original).

Ortega's point is that by instrumentalising the dog to serve as a scaffold in hunting practice, the human has effectively transformed the animal's cognitive processes to their own benefit. The 'reason' that Ortega sees operating within the behaviour of the hunting dog is one that has been imposed upon the dog from the outside and it operates in the interests of the hunter. This in turn raises the possibility that the gratification that the hunting dog appears to derive from engaging in the hunt, if indeed gratification is derived, is itself conditioned by the hunter. And that the'primal urges' that the hunter perceives in the hunting dog are but conditioned reflections of their own affective interests. For Ortega's dog has the hunter 'in its head'.

Ortega's stag, on the other hand, has the dog at its heels. And the game, we have argued, is just as essential for the successful instantiation of the affective scaffolding as the hunter and the dog. What we have referred to in this paper as the hunter-dog dyad forms but two parts of what might be better understood as a hunter-dog-game triad. Whilst we noted a degree of ambiguity about the 'badness' of the scaffolding when viewed from the dog's perspective, this ambiguity is lacking when viewed from that of the deer. While it is important to note that the game is not a static element of the scaffold—the game can try to outmanoeuvre the hunter and hunting dog, and some quarry may even "exploit scent to outwit the dog in surprising ways" (Keil 2021, p. 105)—empirical investigation suggests that the scaffold's effect on the game is persistently 'bad'. Bateson and Bradshaw (1997) carried out a study in order to determine the physiological effects of hunting on red deer. Blood and muscle samples from red deer killed after being hunted with dogs were compared with samples from deer killed with a clean-shot to the head or neck by a professional hunter. The study found that deer hunted with dogs showed lower blood sugar levels than normal, indicating a state of exhaustion. The deer also exhibited signs of muscle disruption, which in turn may indicate capture myopathy as a result of over-exertion (Bateson and Bradshaw 1997, p. 1711). The study noted significantly higher levels of cortisol in the hunted deer, and stated that "Cortisol concentrations elevated to the extremes observed in the hunted deer provide a strong indicator of great physiological and psychological

stress" (Bateson and Bradshaw 1997, p. 1712). In other words, the physiological evidence suggests strongly that deer hunted with dogs suffer considerable stress and anxiety before death. One might object that it is the fate of most deer to be hunted and killed, even in the absence of human presence, and that as such the human hunter is no more culpable than is the wolf. However, as Bateson and Bradshaw point out, the deer's natural predator, the wolf, typically catches them through ambush or short chases. In the cases that they examined the average duration of the hunt was 3.12 h (Bateson and Bradshaw 1997, p. 1707–1709). It is the case then that hunting with dogs significantly increases the duration of the hunt and the stress to the deer beyond that typical of encounters with animal predators. And, unlike deer-hunting by animal predators, it does this for the affective gratification of the hunter. The hunter-dog scaffolding then serves to enhance and prolong the suffering of the game animal.

For this reason, a case can be made that the hunter-dog scaffold qualifies as what Timms and Spurrett (2023) term hostile scaffolding. Hostile scaffolding is defined as the "exploitation of one agent by another *by means of* external structure" (Timms and Spurrett 2023, p. 60). In this instance the use of scaffolding to accomplish a specific task not only harms one of the agents but does so to the direct benefit of another (the hunter). And the harm/benefit distribution is not an accidental feature of the scaffold, but rather one that results directly from the design of the scaffold by the benefitting agent. In this way, from the perspective of the dog, the hunter acts as an external structure that changes the cognitive demands of the dog's task in a way that undermines the dog's interests in attempting the task, and in so doing serves those of another agent. And if this is the case, then the hunter-dog dyad is, from the dog's perspective, a *prima facie* case of hostile scaffolding. One could, leaving aside the broader question of the morality of hunting for sport, conceivably make a case that the hunter-dog scaffolding is benign in the narrower sense that the cognitive and affective changes brought about facilitate the achievement of the hunter's objective. It is harder, though not impossible, to see how one could make a similar case from the dog's point of view. It is however impossible to see how one could make such a case from the quarry's perspective.

4 Conclusion

This paper has argued that the coordination between hunter and hunting dog constitutes a distributed and situated cognitive system. We suggest, based on Sterelny's framework of the scaffolded mind and Keil's investigation into sheepdog trials, that the scaffolded-mind hypothesis can be used to describe the incorporation of non-human species into a cognitive system. And we demonstrate the utility of such an approach through our description of the hunter–hunting dog relationship as symbiotic scaffolding in order to construct an inter-species cognitive system. We noted that the form of scaffolding instantiated here problematises the use of phenomenological transparency as an indicator of cognitive extension in that the hunter-dog dyad involves phenomenological opacity and yet represents an authentic case of cognitive extension. Which in turn suggests that the phenomenological experiences involved in extended cognition of this sort could be distinctly different from those experienced in non-extended cognition.

We further suggest that this relationship entails not merely cognitive scaffolding, but also affective scaffolding. We support this claim by drawing on the account of hunting presented by Ortega y Gasset, and his description of technique (the hunting dog as bred and trained) as a pragmatic response to an environment that presents both opportunities and challenges. The affective relationship between hunter and game, which is scaffolded by the hunting dog, is most significant in understanding the function of the system in that the success of the scaffold hinges upon the affective state of the hunter engendered through the hunt.

The affective affordances provided by the hunter-dog-game technological scaffold generates an affective niche to realise and regulate a specific affective state—a state which allows the hunter to qualitatively conceptualise themselves *as* a hunter. The hunter experiences agency and ownership through the hunt as an intrinsic and irreducible feature of this activity, as does the dog as the result of specific training and selective breeding. However, positing this relationality as an example of affective scaffolding means that the final node, that of the hunted animal, requires similar engagement in terms of affectivity.

Consideration of the suffering of the non-human game animal suggests that ethical evaluation is necessary for cases of cognitive and affective scaffolding—particularly if involving others and animals. We have also indicated features of the normal operation of the hunter-dog scaffold that render it if not bad then certainly problematic, with specific reference to its success being measured against the killing of the animal by the primary user of the scaffold as a necessary side-effect of this extension of their cognitive and affective capacities. We noted that this can result in a form of negative affective feedback, an empathetic experience of momentary disgust and terror, typically followed by a disregard of the game's moral consideration (an affective 'high'). We also problematized the manipulation of the hunting dog by the hunter as part of the scaffolding process. We concluded our analysis by suggesting that the hunter-dog dyad may constitute a form of hostile scaffolding (per consideration of the non-human participants in the scaffold).

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References

Aagaard J (2021) 4E cognition and the dogma of harmony. Philos Psychol 34(2):165–181

Bateson P, Bradshaw E (1997) Physiological effects of hunting red deer (*Cervus elaphus*). Proc Biol Sci 264(1389):1707–1714.

Candiotto L, Stapleton M (2024) Assistive technology as affective scaffolding. Topoi 43:747–756. https://doi.org/10.1007/s11245-024-10019-w

Caravà M, Benenti M (2024) Not so blue to be sad: affective affordances and expressive properties in affective regulation. Topoi 43:713–724. https://doi.org/10.1007/s11245-024-10037-8

Clark A (2003) Natural born cyborgs. Oxford University Press, Oxford

Clark A (2008) Supersizing the mind: embodiment, action, and cognitive extension. Oxford University Press, Oxford

Clark A, Chalmers D (1998) The extended mind. Analysis 58:7–19

Colombetti G, Krueger J (2015) Scaffoldings of the affective mind. Philos Psychol 28(8):1157–1176

Despret V (2013) Responding bodies and partial affinities in human-animal worlds. Theory Culture Society 30(7–8):51–76

Du Toit J, Swer G (2021) Virtual limitations of the flesh. Phenomenol Mind 20:20–31

Flor NV and Hutchins EL (1991) Analyzing distributed cognition in software teams: A case study of team programming during adaptive software maintenance. In Empirical studies of programmers (Vol. 4, pp. 36–64). Norwood, Ablex

Gallagher S (2005) Dynamic models of body schematic processes. In H. De Preester and V. Knockaert (eds). Body Image and Body Schema (233–250). Amsterdam: John Benjamins Publishers.

Gieser T (2008) Embodiment, emotion and empathy. Anthropol Theory 8:299–318

Gieser T (2017) The experience of 'Being a Hunter.' Hunter Gatherer Res 3:227–251

Gieser T (2018) Killing a wounded sow. In: Breyer T, Widlok T (eds) The situationality of human-animal relations: perspectives from anthropology and philosophy, vol 15. Transcript Verlag, Bielefeld, pp 129–142

Gieser T (2020) Wald, wild, wetter und das waidwerk: Sinnliche erkundungen einer jagdlandschaft. Alltag - Kultur – Wissenschaft 7, pp 169–196.

Gieser T (2021) Into the meshwork of the forest: a sensory exploration of hunting landscapes in Germany. Revista Andaluza De Antropología 21:123–146

Giovanna, Colombetti Tom, Roberts (2015) Extending the extended mind: the case for extended affectivity. Philosophical Studies 172(5):1243–1263. https://doi.org/10.1007/s11098-014-0347-3

Griffiths P, Scarantino A (2009) Emotions in the wild: the situated perspective on emotion. In: Aydede M, Robbins P (eds) The Cambridge handbook of situated cognition. Cambridge University Press, Cambridge, pp 437–453

Hutchins E (1995) Cognition in the wild. MIT Press, London

Ihde D (1979) Technics and praxis. D Reidel Publishing Company, London

Ingold T (2000) The perception of the environment: essays on livelihood, dwelling and skill. Routledge, New York

Ingold T (2011) Being alive: essays on movement, knowledge and description. Routledge, London

Ingold T (2015) The life of lines. Routledge, New York

Keil PG (2015) Human-sheepdog distributed cognitive systems: an analysis of interspecies cognitive scaffolding in a sheepdog trial. J Cogn Cult 15:508–529

Keil PG (2021) Rank atmospheres: the more-than-human scentspace and aesthetic of a pigdogging hunt. Aust J Anthropol 32:96–113

Kirsh D (1995) Complementary strategies: Why we use our hands when we think.

Lorimer J, Hodgetts T, Barua M (2017) Animals' atmospheres. Prog Hum Geogr 43(1):26–45

Marvin G (2003) A passionate pursuit: foxhunting as performance. Sociol Rev 51(2):46–60

Marvin G (2005) Sensing nature: encountering the world in hunting. Etnofoor 18:15–26

Menary R (ed) (2010) The extended mind. MIT Press, Cambridge

Orr B, Malik R, Norris J, Westman M (2019) The welfare of pig-hunting dogs in Australia. Animals 9(10):853

Ortega y Gasset J (1963) Man and people. W.W. Norton & Company, New York

Ortega y Gasset J (1972) Meditations on hunting. Charles Scribner's Sons, New York

Perri A (2020) Prehistoric dogs as hunting tools: the advent of animal biotechnology. In: Bethke B, Burtt A (eds) Dogs: archaeology beyond domestication. University Press Florida, Gainesville, pp 2–44

Shroer SA (2019) Jakob von Uexkull: the concept of umwelt and its potentials for an anthropology beyond the human. Ethnos. https://doi.org/10.1080/00141844.2019.1606841

Slaby J (2016) Mind invasion: Situated affectivity and the corporate life hack frontiers in psychology710. https://doi.org/10.3389/fpsyg.2016.00266

Smart P, Andrada G, Clowes R (2022) Phenomenal transparency and the extended mind. Synthese 200:335

Spurrett D, Brancazio N (2023) Fashioning affordances: a critical approach to clothing as an affordance transforming technology. Philos Psychol, 37:7, 1899-1923. https://doi.org/10.1080/09515089.2023.2263478

Spurrett D (2024) On hostile and oppressive affective technologies. Topoi 43:821–832

Sterelny K (2010) Minds: extended or scaffolded? Phenomenol Cogn Sci 9:465–481

Sutton J, Harris CB, Keil PG, Barnier AJ (2010) The psychology of memory, extended cognition, and socially distributed remembering. Phenomenol Cogn Sci 9:521–560

Thompson E, Stapleton (2009) Making Sense of Sense-Making: Reflections on Enactive and Extended Mind Theories. Topoi 28, 23–30. https://doi.org/10.1007/s11245-008-9043-2

Timms R, Spurrett D (2023) Hostile Scaffolding Philos Papers 52:53–82

Tyler T (2021) A view to kill: a multi-species ethnographic enquiry of dogs used for hunting in Cyprus. Doctoral Dissertation, University of Exeter

Wheeler M (2019) The reappearing tool: transparency, smart technology, and the extended mind. AI Soc 34:857–866