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Animal Communication and Neo-Expressivism

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Introduction

One of the earliest issues in cognitive ethology concerned the meaning of animal signals. In the 1970s and 1980s this debate was most active with respect to the question of whether animal alarm calls convey information about the emotional states of animals or whether they "refer" directly to predators in the environment (Seyfarth, Cheney, & Marler 1980; see Radick 2007 for a historical account), but other areas, such as vocalizations about food and social contact, were also widely discussed. In the 1990s, ethologists largely came to a consensus that such calls were "functionally referential" (Evans & Marler 1995) even if they did not satisfy all the semantic requirements imposed by philosophers of language. More recently, though, it has been argued that ethologists should eschew the concept of reference and return to a focus on the affective aspects of animal communication (Rendall & Owren 2002). We propose to take a new look at this debate in the light of recent developments in the philosophy of language under the heading of "Neo-Expressivism" (Bar-On 2004). This view provides two different senses

in which an utterance satisfies an *expressive* function. We intend to use Neo-Expressivism to provide a philosophical framework for understanding the relationship between the affective and referential aspects of animal signals by seeing them as *both* acts that express some motivational state of the animal *and* products that express propositions with truth-evaluable content. Defending the second part of this claim requires us to reject the recent proposal that non-conceptual content is entirely adequate for understanding the cognition and communication of animals.

I. What is Neo-Expressivism?

Neo-Expressivism was first proposed as a way to account for some of the distinctive features of avowals, where an avowal is understood as a self-ascription of a present mental state (Bar-On 2004). Neo-Expressivism employs two corresponding distinctions, one between utterances as *acts* and as *products* and one between the notion of "expression" in the *action* sense and in the *semantic* sense. Consider the act/product distinction first. With respect to "avowal," Bar-On writes,

> It can be read as referring to someone's act of avow*ing*, which is an event in the world with a certain causal history and certain action properties. But it can also be read as referring to the result or product of such act—a linguistic (or language-like) token, an item with certain semantic properties (Bar-On 2004, p. 251).

An utterance, such as an avowal, then, can be expressive either as an act or as a semantic product. Expression in the *action* sense—what we will call "a-expression"—occurs when "a *person* expresses a state of hers by intentionally doing something" (Bar-On 2004, p. 216).[1] However, expression in the *semantic* sense—what we will call "s-expression"—occurs when "a *sentence* expresses an abstract proposition, thought, or judgment by being a (conventional) representation of it" (Bar-On 2004, p. 216).[2] Thus, on a Neo-Expressivist account of avowals, an utterance of the sentence "I am tired and hungry" a-expresses the speaker's fatigue and hunger, while the product of this act s-expresses a truth-evaluable proposition, which is semantically continuous with other ascriptions, such as "She is tired and hungry" and "I was tired and hungry yesterday" (Bar-On 2004, p. 23) and can be embedded in truth-preserving inferential contexts involving statements such as "If I am tired and hungry, then I should stop working."

Bar-On and Chrisman (in press) apply the Neo-Expressivist machinery to ethical claims, which is of particular interest to us because the affective approaches to animal communication seem closely aligned with the view to which Bar-On and Chrisman are responding, namely, Traditional Expressivism—the view that an ethical claim is nothing over and above the expression of a non-cognitive mental state, whose content is not truth-evaluable. Although Expressivism accounts nicely for the apparent, *internal* link between the making of an ethical claim and some motivation to act in accordance with it, Expressivism has trouble reconciling its main thesis with the apparent truth-evaluability of ethical claims, as indicated by their surface similarity with straightforward declarative sentences. Bar-On and Chrisman argue that Neo-Expressivism can accommodate both features of ethical claims. The idea is that, while the act of making a genuine ethical

claim does require that the agent a-express the appropriate (possibly non-cognitive) motivational state, the product of that act s-expresses some proposition with truth-evaluable content (Bar-On and Chrisman in press, p. 141). Thus, while the *act* of making an ethical claim, such as "Torture is wrong," might express some conative mental state in the same way that the act of saying "Boo!" or "Hooray!" does, the *product* of making an ethical claim is semantically on par with a sentence such as "Torture is legal." Bar-On and Chrisman employ the notion of *felicity conditions* on acts to explain the internal link between the two types of expression at work in ethical utterances. The main idea is that an ethical claim is *genuine* only when the act of making such a claim expresses, in the action sense, an appropriate motivational state. The felicity conditions on offering an apology provide a familiar analogue to this idea. The norms governing such conditions are informed, in part, by pragmatic considerations, by what practical purpose acts of apology are supposed to serve. In the case of apologies, at least, part of that purpose simply is the expression of regret on the part of the apologizer. Thus, although saying "I'm sorry" has as its product a certain truth-evaluable content regardless of whatever attitude is a-expressed, if the speaker a-expressed no sentiment of regret, then he is guilty of an expressive failure or impropriety—he fails to make a proper or genuine apology (Bar-On and Chrisman in press, pp. 149). We'll have more to say about this role of felicity conditions, as it applies to animal signals, later in the paper.

Our aim in this paper is to exploit the Neo-Expressivist apparatus to provide a new philosophical perspective on the meaning of animal alarm calls and on animal communication more generally, applying the idea that what Bar-On has identified is a subset of utterances that are *both* expressions of certain emotional or motivational states

and expressions of some content that is truth-evaluable. Our suggestion is that some animal signals are members of this subset. Thus, for example, a vervet monkey's leopard alarm call could be an act that a-expresses the monkey's fear, an act whose product s-expresses the proposition that the predator is present. Now Bar-On herself is careful to emphasize that not all verbal or gestural expressive acts have products that are s-expressive. For example, suppose a person smiles upon seeing a child helping an elderly woman with her groceries. This person a-expresses a feeling of *happiness*. But the product of this expression of happiness—the smile itself—does not, according to Bar-On, meet the conditions of truth-evaluability that, for example, the sentence "I am happy" does. A smile does not seem to s-express a truth-evaluable proposition. Bar-On writes, "The product of an act of avowing, unlike a smile or a wince, or even a verbal cry such as "Ouch!," is a *semantically articulate* self-ascription, an item with *semantic structure* and truth-conditions. It is a product whose properties allow it to serve, and be caught up, in other kinds of distinctively linguistic (and mental) acts" (Bar-On 2004, p. 251, our italics). The operative question for our purposes, then, is whether animal signals, or at least some of them, should be grouped with avowals and ethical claims or rather with smiles and winces. We, of course, argue for the former, but this argument requires a defense of the claim that the animal signals in question meet the requisite criteria of articulate semantic structure. We will turn to this question in section III. But first we will look more closely at some of the extant views on the meaning of animal communication and how they map on to the position of Neo-Expressivism.

II. From avowals and ethics to ethology

In this section, we lay out three approaches to the study of animal communication: an approach that emphasizes its affective function, an approach that emphasizes its referential function, and an approach that combines both. Just as some traditional Expressivists regard ethical statements as mere expressions of emotion, many ethologists interested in the vocalizations of animals have also focused on the affective aspects of these vocalizations. Darwin himself had noted that certain features of animal vocalizations appear to be correlated with emotional arousal—high-pitched calls correspond to high arousal, for instance (see Hauser 1996, esp. ch. 7, for a review). In light of such observations, one way to understand animal signals is to treat them simply as natural expressions of affective states, which have their effect by inducing an affective state in their receiver (see e.g., Rowell and Hinde 1962; Bastian 1965). Rendall and Owren (2002) go so far as to claim that it is *only* the receiver's affective response that is important to understanding the evolutionary function of animal signals. Thus they dismiss questions of the semantic content of animal alarm calls, claiming instead that such calls are best explained in terms of their function of influencing "the behavior of others in ways that are, on average, beneficial to signalers (and potentially, though not necessarily, also to listeners)" (Rendall and Owren 2002, p. 307; see also Dawkins & Krebs 1978, Krebs & Dawkins 1984). This leads them to say that their approach "emphasizes subcortical systems like the brainstem and limbic structures that control attention, arousal and affect" (Rendall and Owren 2002, p. 311).

Rendall and Owren are in fact reacting against the preceding thirty years of research into the semantic or referential properties of animal signals, an approach which,

they write, "is a bit peculiar in that it uses a single, recent, and potentially highly derived system of communication (language) to model scores of phylogenetically older and evidently simpler systems" (Rendall and Owren 2002, p. 307). Nevertheless, recent scientific consensus among ethologists has been that a semantic, referential framework is appropriate for investigating animal communication. One very influential set of field studies was conducted over multiple years by Robert Seyfarth and Dorothy Cheney (Seyfarth et al. 1980; Cheney & Seyfarth 1991). This research was conducted in the Amboseli National Park, Kenya, and was begun when Cheney and Seyfarth were postdoctoral advisees of Peter Marler. Struhsaker (1967) had reported that vervet monkeys at Amboseli produced a variety of acoustically distinct "alarm calls" when confronted with different predators. Cheney and Seyfarth recorded these alarm calls and played them back to the monkeys from loudspeakers hidden in the bushes. Using the results from these experiments and their other direct observations, they argued that alarm calls elicit responses that are keyed to a predator type and not to the caller's motivational state. As Seyfarth & Cheney (2003, p.51) summarize their argument, "Viewed from the signaler's perspective, animal vocalizations are unlikely to be caused exclusively by emotions because they can be given or withheld depending on many different social factors and because—in encounters with different predators, for example—animals give acoustically different calls in situations with similar emotional valence." These studies and others conducted by scientists associated with Marler's research group have led many ethologists to the view that alarm calls in many species are at least "functionally referential" in conveying information about predators and are not just expressive of a caller's own state of alarm (Evans & Marler 1995; see also Hauser 1996).[3]

Marler (1992) recognized the utility of treating alarm calls as simultaneously conveying information about a predator and the caller's emotional state, and many ethologists would agree. This position is easily assimilated to Neo-Expressivism. Indeed, these observations from ethology and the position of Neo-Expressivism are mutually supportive. On the one hand, ethologists, who have clearly been reading some of the philosophical literature on reference, have been worried that such philosophical accounts of reference involve issues that they cannot resolve empirically (e.g., Quine's (1960) "Gavagai" problem), or seem to require cognitive capacities beyond those that are plausibly attributed to animals (e.g., the higher-order intentional states in the Gricean framework advocated by Dennett 1983).[4] We think Neo-Expressivism provides a better option for ethologists seeking a philosophically rich account of communicative expression, although its application to animal communication may present its own empirical challenges. On the other hand, philosophers can benefit from this assimilation to the extent that Neo-Expressivism can be applied or could be developed to apply to a wider range of communication than initially thought. Our suggestion is that the best explanation of the meaning of animal alarm calls is that they are acts that a-express some motivational state of the animal, acts whose products s-express some proposition with truth-evaluable content. Indeed, this not only widens the scope of Neo-Expressivism but also suggests how the study of animal communication may be relevant to understanding the evolution of human language.

III. Conceptuality and truth-evaluability

We recognize, however, that some philosophers and scientists will be skeptical of the idea that alarm calls and other communicative acts of animals are usefully assimilated to linguistic utterances that have truth-evaluable content. Davidson (1982), for example, argues that nonhuman animals lack the interpretive abilities necessary for genuinely conceptual thought or semantically interpretable communication. More recently, some philosophers have suggested that animal cognition lacks the kind of conceptual structure that is paradigmatic of human cognition (the recent literature on non-conceptual content is full of examples of this position; see Gunther 2003). Perhaps there is trouble looming when Bar-On claims that avowals, unlike natural expressions such as smiles or winces, are "semantically articulate" and have "semantic structure," if this articulate semantic structure requires a degree of conceptuality that animals, and the products of their expressive acts, do not possess (Bar-On 2004, p. 251).

Two strategies for responding to this worry about the applicability of Neo-Expressivism to animal signals are available. One is to accept that animals lack conceptual capacities but also to show how a notion of non-conceptual content (NCC) could be sufficient for truth-evaluability. The other strategy is to accept that conceptual content is required for truth-evaluability but to argue that at least some animals have sufficient conceptual capacities to support truth-evaluability. In this paper we'll pursue the latter strategy, which is in keeping with the main thrust of Bar-On's Neo-Expressivist approach. In Section V we will criticize recent attempts to treat NCC as adequate for explaining the entire cognitive and communicative repertoire of animals, but first we must say more about the relationship of conceptuality to articulate semantic structure and truth-evaluability.

Although Bar-On, in her discussion of avowals, has given some indication of what a semantically articulate product is, we need to say more about what we mean by "enough semantic structure to support truth-evaluability." Here we'll adopt two generally Fregean ideas. One is of predication as the basic structure of any propositional content. The other is of propositions as the bearers of truth. In predication, an object is "brought under" a concept, and content that is thus structured is "conceptual." Gunther (2003, p. 8) characterizes four "conceptualist" principles which he claims are derived from a Fregean characterization of conceptual content. These four principles are as follows.

(1) *Compositionality* is the idea that complex contents are determined by their constituents. It is typically taken as a corollary that these constituents can recombine to form other complex contents. For example, the content of the sentence "John is a philosopher" is determined by the simpler constituents "John," "philosopher," etc.

(2) *Cognitive Significance* connects perceptual and other mental contents to beliefs. According to this principle, the conceptual content of any mental state or communicative signal is a possible belief content. Cognitive agents typically form beliefs on the basis of such contents, but are capable of learning when to withhold judgment. For example, perceiving that one object is larger than another typically leads to a belief with this content, but some cognitive agents can flexibly learn that a distorting mirror undermines this perception-judgment link. An organism that lacks any flexibility of this kind would have states without cognitive significance.

(3) *Reference Determinacy*, as the name suggests, is about how conceptual content is related to its reference. There are several different ways of construing this principle, but the one that fits best with the present subject is what Gunther (2003) calls the "recognitional construal." An agent is able to recognize the referent of its conceptual content.

(4) *Force Independence* concerns the idea that agents may have different attitudes to one and the same content. One may believe that it is sunny today, or one may desire that it be so. This principle enables intercommunicability of conceptual content. If one thought that the conceptual content of the belief that it is sunny was different from the conceptual content of the doubt that it is sunny, then the two attitudes would be about different things. Furthermore, if these two different attitudes (i.e. belief and doubt) were not separable from their conceptual contents, then a single individual would not be able to entertain different attitudes toward the same contents.

Gunther suggests that for a putative semantic content to fail to conform to any one of these principles is for that content to be nonconceptual. We are inclined to draw a less sharp line, but we do not wish to argue a merely terminological point. Nonetheless, we believe that a more fruitful approach is to consider how animal signals may approximate the conditions described by the four principles. We contend that conformity with all four principles is not required for fruitful application of notions such as truth-evaluability and semantic continuity to animal communication. Consequently, our strategy is not to try to

prove that the utterances of any nonhuman animals satisfy all four criteria simultaneously. Instead, we will be satisfied if we can make it plausible that, by approximating one or more of these features, specific instances of animal communication are appropriately understood in conceptualist and Neo-Expressivist terms.

IV. Grunts, squeals, and other arbitrary signals

In this section we discuss the application of the four principles of conceptuality identified by Gunther to animal communication. It is important to realize that we can only scratch the surface of the diversity of animal signals. Monkeys grunt to convey the presence of predators, or chutter to indicate their social intentions. Rats "laugh" ultrasonically when tickled (Panksepp & Burgdorf 2003). Recently, we have even been told that the release of air from the rear ends of herrings may actually say something that need not be regarded as a fish faux pas (Wilson, Batty & Dill 2004). No one should think that the study of animal communication is glamorous work. Nor should they think that any firm generalizations about animal communication can be derived from inspecting just one or two examples. Ethologists have made it their goal to unpack the meanings of all manner of signals, auditory, visual, and perhaps even tactile and olfactory. Nevertheless, because space would not allow us a full review of all forms of animal communication, we shall focus in this section mostly on auditory vocalizations of mammals, although we shall also briefly discuss the canid play bow, which is a visual display. We shall argue that the four principles of compositionality, cognitive significance, reference determinacy, and force independence can be associated to different degrees in various

examples of nonhuman mammalian vocal communication. And to the extent that these four principles do apply to some animal signals, these signals satisfy the criterion of articulate semantic structure and, thus, meet the requirement for truth-evaluability.

We will not take the four principles in the order that Gunther lists them. Instead, we begin with *reference determinacy*, since this topic has been explicitly discussed by ethologists themselves. For example, when discussing the meaning of vervet monkey alarm calls, the issue of specificity of content comes up very quickly. Vervet monkeys produce at least three acoustically distinct calls in connection with predatory eagles, leopards, and snakes. Seyfarth, Cheney, and their former student Hauser, have considered determinacy of reference against the background of what they discovered about the ontogenesis of alarm calls. Young vervets, for instance, begin by producing "eagle" alarm calls in response to many things moving overhead, including such things as falling leaves. But over time they narrow their responses to just those species that actually prey on vervets. At the Amboseli research site, adult vervets typically produced alarm calls in response to two species (martial eagles and crowned eagles), but not to a third species of eagle that is morphologically more similar to one of the predatory species than either of the two predatory species are to each other.

This production specificity seems to be shaped by the response of adult monkeys to the calls of juveniles. When juveniles give an alarm call, the adults scan the appropriate direction and may or may not repeat the call. The responses of juveniles are rapidly shaped by adult repetition of their calls. Caro and Hauser (1992) describe an instance observed by Hauser of a young monkey producing the "leopard" call in response to an elephant. Coincidentally, there was a leopard nearby that elicited a call from an

adult. It took months for the juvenile to stop giving alarm calls to elephants despite the absence of any further reinforcement from adults.

These facts and others were taken to help solve the question of what content the signals convey. Clearly "eagle" is too generic for the "eagle alarm call" (although most people continue to refer to it as such). But to gloss the signal's content with the phrase "martial eagle or crowned eagle" might seem too specific insofar as it hooks the content to a human taxonomic scheme. "Threatening bird overhead" might be more like it, but even here there is a skeptical tug—do monkeys really understand the distinction between birds and other animals? This worry, pulling one to doubt whether any phrase of English is adequate to the job of conveying the content of animal signals, was paramount among philosophers such as Davidson, Dennett, and Stich around 25 years ago. We're not going to address their arguments here (instead, see Allen 1992; Allen & Bekoff 1997, ch. 4). Our point here is simply to establish that there was, and remains interest among ethologists in assigning specific meanings to the vocalizations and other signals of nonhuman animals (see also the studies cited below).

We turn now to another of Gunther's principles: *force independence.* In the background to the discussions about the content specificity of vervet alarm calls was also the question of "illocutionary" force of animal calls: do alarm calls have declarative (assertoric) force, such as "eagle", or imperative force, such as "take cover!" Some reasons for thinking that for vervets, at least, the force might be considered declarative include (i) that the calls continue even when all are appropriately situated and (ii) that appropriate responses vary from individual to individual, so there is no univocal command being given. If one were to gloss the calls as having imperative force, one

might need to gloss the content as something like "do whatever is appropriate for a predatory bird overhead!" thereby involving reference to the predator in the content.

Of course, to concede that utterances might have different force is not yet to say that the content of those utterances is force independent — i.e., that animals might express different attitudes to the same content. Nevertheless, it remains an empirical possibility. Consider, for example, the play bows of dogs and other canid species, a stereotyped lowering of the animal's front end while the rear is kept at its normal height. Play bows preceding play bouts appear to serve as invitations to play, or as expressions of a desire to play. Bekoff's (1995) analysis of the placement of play bows during play indicates that these are best understood as declarations that what just preceded the bow or is about to follow it (e.g., a bite) is still play. Hence, the same content ("play is ongoing") appears in one context (prior to play) to have the force of a desire or request and in the other context (during play) to have the force of an assertion.

So far, then, we have identified some possible analogs to reference determinacy and force independence in animal communication. What of *compositionality*? It has generally been assumed that the calls of vervet monkeys lack compositional structure. Since Cheney & Seyfarth conducted their studies, however, the technology for playback experiments in the wild has improved, making it much more possible to test the reaction of animals to combinations of signals. Such studies (pioneered by Zuberbühler, who is a former student of Cheney & Seyfarth) suggest a semantic role for different components of the acoustic signals in other primates such as Diana monkeys (Zuberbühler 2000), putty-nosed monkeys (Arnold & Zuberbühler 2006, 2008), gibbons (Clarke et al. 2006), and chimpanzees (Crockford & Boesch 2005).

Although the expressive power of combinations of discrete elements have been the focus of these recent investigations into primate vocalizations, researchers interested in other systems of mammalian vocalizations have been interested in other ways in which such vocalizations may be modified to produce semantically compositional messages. Slobodchikoff and colleagues (1986, 1991) have used recordings and playbacks to investigate the alarm calls of Gunnison's prairie dogs. They have provided evidence not just of predator specificity for the alarm calls of prairie dogs, but also for specific modulations of pitch and frequency of the calls to describe features of predators. For instance, Ackers & Slobodchikoff (1999) analyzed the vocalizations of prairie dogs elicited by artificial silhouettes of predators and concluded that fundamental harmonic frequency and a combination of the dominant harmonic frequency and the interharmonic interval are the components describing the size and shape of the eliciting stimuli. Based on such results Slobodchikoff claims to have identified noun-like, adjective-like, and verb-like elements in the calls of Gunnison's prairie dogs, enabling them to convey information not just about predator type, but about physical features such as size and color, and about the speed with which a potential predator is moving (see Slobodchikoff 2002 for a review). Slobodchikoff's description of prairie dog communication in terms of noun-like, adjective-like, and verb-like elements is, we concede, controversial. Nonetheless, the work makes clear that compositionality in animal communication systems is a matter for careful empirical investigation.

We have saved *cognitive significance* until last because it is perhaps the most obscure of Gunther's four criteria. However, the issues of learning and flexibility have been discussed in the context of animal behavior. For instance, in their discussion of

animal concepts Allen & Hauser (1990) stress the difference between the relatively inflexible behavior of ants with respect to dead nestmates, and the kind of learning that humans would display under conditions where evidence of death was undermined by contrary evidence. To many authors, cognitive significance and the role of evidence is further related to the social, norm-guided practice of giving reasons for beliefs. While nonhuman animals don't engage in the full range of normative practices that are characteristic of human social groups, Bekoff's research on "playing fair" (Allen and Bekoff 2005) provides one context in which normative notions may be appropriately deployed. Using comparative data between various canid species, including dogs, wolves, and coyotes, Bekoff has shown that play bows are sometimes used dishonestly, in that, after soliciting play, an animal may use this opportunity to establish dominance. This is most frequent in coyotes, the most aggressive of the three species. But Bekoff argues that dishonest signaling can eventually lead to ostracization from the group. This discussion of play bows is congruent with Bar-On's discussion of the felicity conditions governing avowals and ethical claims. An avowal or ethical claim, according to such conditions, is *genuine* or *proper* only when the agent a-expresses an appropriate motivational state in uttering it. Similarly, we might claim, an animal's play bow is *genuine* only when the animal a-expresses a desire to play, as opposed to (e.g.) a desire to establish dominance. It is the fact that the animals themselves seem to be assessing the genuineness of each other's signals, e.g., as the coyotes do by ostracizing conspecifics who use the signals infelicitously, that leads us to the view that some notion of cognitive significance applies here. Animals aren't just passive responders to signals with pre-determined meanings, but

they are active epistemic agents capable of adjusting their responses to signals in light of evidence about the reliability of the signalers.

One might worry that the cognitive significance of play bows, alarm calls, etc. is of significance only to the scientist, and not to the animal subjects themselves. An experiment by Seyfarth and Cheney (1990) suggests however that vervet monkeys do assess the reliability of other individuals and adjust their behavior to unreliable signaling. In their experiment, one call of a target monkey was repeatedly played back to other members of the target's group, when the target herself was out of sight. Once the others had habituated, no longer showing an overt response to this individual's vocalization, Seyfarth and Cheney played back a different call from the same individual, or a call of the same type recorded from a different individual, and observed the reactions of the members of the group. They found no habituation to the calls of other individuals, but they found an interesting pattern with respect to calls from the target individual. If the others had been habituated to an alarm call, the monkeys showed no transfer of habituation to a different alarm call from the same individual — in other words they responded normally to leopard alarm calls even though they had learned to ignore the target's eagle alarm calls. But if they had been habituated to a call with a social function (such as the "moving-into-the-open grunt") then the habituation transferred to other calls with social functions (such as a "contact" call) — in other words, they ignored all of the target's calls within the social category, despite the fact that these calls have very different acoustic properties. From this, Seyfarth and Cheney argued that the vervets categorized the social calls semantically — in terms of the kinds of activities and situations they refer to — rather than syntactically in terms of the audible features.

Our conclusion from this too brief discussion is that the non-conceptuality of animal communication is not a foregone conclusion. The extent to which animal signals satisfy the principles of conceptuality identified by Gunther requires additional empirical investigation. Nevertheless, the recent trend in the empirical literature has been towards recognizing more semantic structure rather than less. Thus we submit that the *s-expressive* dimension of the Neo-Expressivist stance is fruitfully applied to nonhuman animals.

V. Truth-Evaluability without concepts?

In this section, we bolster the case for the conceptualist stance by taking a critical look at how the notion of non-conceptual content has been applied by philosophers to animal cognition and communication. It has been quite commonplace among philosophers writing about non-conceptual content (NCC) to make claims about animals. Thus, Andy Clark writes, "[T]he idea of nonconceptual content seems well suited to describing the cognitive states of many animals" (2003, p. 172). As well as suggestions that NCC might be useful for ethologists, there is a class of arguments that appeals explicitly to nonhuman animals to bolster the case for the very existence of NCC. For instance, Gareth Evans, the archetypal proponent of NCC, takes it for granted that various nonhuman animals perceive and remember things, and that these states have intentional content even though the animals possessing them lack concepts of the things about which they carry

information. In its most general form, the argument can be schematically presented like this.

  E   1. Animals possess representational states with content.

        2. Animals lack concepts.

        C. The content of animals' representational states is non-conceptual.

As it stands, this argument does not wear its validity on its sleeve, but we will presume

for the sake of discussion that some reasonable way can be found to state the connection

between concepts and contents that would justify the inference.

Evans and others extend the basic argument further, arguing for the significance

of NCC by asserting that it accounts for what is shared between human and nonhuman

animal cognition. This view is sympathetically echoed by Peacocke (2001, p. 614), who

claims that, while it is plausible to deny concepts to lower animals, it is also plausible to

affirm some properties—e.g., certain spatial representations—as common to the

perceptions of both humans and lower animals. "If the lower animals do not have states

with conceptual content," Peacocke concludes, "but some of their states have contents in

common with human perceptions, it follows that some perceptual representational

content is nonconceptual."

Another major source of motivation for defenders of NCC comes from reflections

on the character of perception. It is observed that the exact content of any perceptual state

seems ineffable: no matter how much one says about one's present visual experience, for

example, one is bound to run out of words to express the sheer variety of hues and

textures contained in that experience. This inexpressible residue, it is argued, does not fall

under any concepts we possess. Such arguments rely on an introspective appeal to the

richness or "fine-grained" nature of perception, and, as outlined here, they commonly

rely on implicating words and concepts (calling them "lexical concepts" is simply to label

the connection without justifying it). Such a tight connection between conceptual content

and language further reinforces the idea that the mental states of languageless animals

must be nonconceptual in content.

The discussion of the applicability of NCC to animals in the literature has largely

been carried out at an intuitive (armchair) level. Gunther remarks that "Like Evans and

McDowell, many assume that animals don't have concepts (although the relevant

principle and rendering are generally not identified)...." (Gunther 2008, p. 23). This is a

bit harsh, as authors from Evans to Clark have made some stab at justifying their

acceptance of premise E2, that animals lack concepts. Clark, for example, writes:

> To have (properly) the concept *fly* involves more than being able to find your way
>
> around (like the frog) in a fly-infested domain. It involves having a whole web of
>
> concepts in which your concept of fly is embedded. This consciously echoes
>
> Evans' Generality Constraint (Evans 1982, pp. 100-105), which insists that to
>
> truly possess a concept *a* you must be able to think *a* in all the (semantically
>
> sensible) combinations which it could enter into with other concepts you possess.
>
> (Clark 2003, p. 173)

To be sure, "having a whole web of concepts" is not a particularly clear rendering of a

principle. (And see Fodor 1998 for a contrary defense of conceptual atomism.) We could

(and perhaps should) also put pressure on Clark's notion of being "semantically

sensible," for what seems a semantically sensible thought about a fly from one point of view need not seem semantically sensible given another. (Was the original idea that light waves propagate in a vacuum semantically sensible?) Clark actually suggests using hyphenated phrases to express "unstructured" animal contents. (So the content is not "eagle threatening" but "eagle-threatening"). From the point of view of the practicing ethologist, this suggestion has little utility for it provides no help in answering the question of what words are appropriately inserted around the hyphens (for example "eagle-threatening" vs. "overhead-predator-threatening"). Concepts or non-concepts, the ethologist is still going to be thrown back on notions articulated by Marler and the scientists he has influenced (see also Allen & Saidel 1998).

José Bermúdez (2003a,b) is among the more empirically-informed defenders of NCC for animals, although his appeals to actual cognitive ethology are made with a view to supporting premise E1. He cites cognitive ethologists for their commitment to using intentional/representational notions to explain animal behavior (2003b, p.4) and he takes the success or failure of this research program to be an empirical matter (2003a).

Bermúdez's view of the defense of E2 is that it "depends upon a substantive philosophical account of what it is to possess a concept" (2003a). Like Clark, Bermúdez mentions Evans' generality constraint in this context as essential to concept possession. Bermúdez also argues that the allegedly domain-specific nature of animal cognition is incompatible with the generality constraint. But Bermúdez raises the bar further by talking about "concept mastery" as a criterion for having thoughts with conceptual content. According to Bermúdez, "genuine concept mastery involves an ability not simply to make judgments involving those concepts but also to justify those judgments

and to reflect on the grounds for them." These he takes to be "paradigmatically language-dependent activities" (2003b, p.ix) and *ipso facto* beyond the range of nonhuman animals. It is unclear why one should equate concept mastery with concept possession, but we'll leave this point aside for now. It's sufficient for our current purposes that the introduction of NCC does not clarify ethological practice or suggest further empirical work. In contrast, a conceptualist take on animal communication suggests various fruitful lines of research that, as we described in the previous section, already have counterparts in the ethological literature.

If the issue for understanding nonhuman animal communication were that of truth-evaluability alone, perhaps either a conceptualist or nonconceptualist account would be appropriate — even NCC can be true or false. However, the notion of s-expression in the Neo-Expressivist account also invokes semantic continuity across the variety of utterances produced by an actor. We submit that such continuity requires a way to connect the content of different utterances to each other. NCC provides no account of these connections. Even if the content of animal signals falls short of the full inferential promiscuity of human language, there is nonetheless sufficient evidence that animal signals are not interpreted as isolated semantic units. A conceptualist take on the s-expressive power of animal communication is warranted.

VI. Future Directions

We conclude by proposing some future directions that a continuation of the present discussion might take. We have argued that at least some animal signals are best understood as acts that express some motivational state of the animal, acts whose products express some proposition with truth-evaluable content. With respect to some animal signals, we have speculated about what particular motivational state is a-expressed and what propositional content is s-expressed, but we happily concede that support for such speculations requires further investigation, both scientific and philosophical. Another question, though, is why the a-expression of some particular motivational state would correspond to the s-expression of some propositional content in the first place. Bar-On's suggestion is that the "internal" link between the motivational state and the propositional content is fixed by the conditions on what constitutes a *proper* performance of the expressive act in question. And the norms governing the proper performance of such acts are fixed, in part, by what function these acts have in the practices in question. Consider, for example, how Bar-On and Chrisman describe this internalist thesis with regard to ethical claims:

> [W]hat is distinctive about ethical claims—what renders them *ethical* claims—is the fact that a person who issues an ethical claim is supposed to give voice to a (type of) motivational state using a linguistic (or language-like) vehicle that involves ethical terms or concepts. This … is not offered simply as a generalization about what regularly happens when people issue ethical claims; rather it is a characterization of a certain category of acts—acts of making ethical claims—in terms of their point, which distinguishes them from other kinds of claim-making acts, and has implications for their proper performance (pp. 144-5).

We think this reading of the internalist thesis holds promise for the study of certain categories of animal communication as well. Consider the case of the insincere use of

canid play bows: the bowing individual, in this case, fails to a-express the appropriate motivational state required to make this act a *genuine* play bow. The conditions governing what counts as a genuine play bow, on this view, include at least the requirement that the bowing individual a-express a motivation to play, as opposed to a motivation to fight, for instance. The expression of a motivation to play is part of the very *point* of play bows. Likewise, genuine alarm calls require a-expression of a state of concern or fear about a predator. And given the observations of ethologists going all the way back to Darwin about the acoustic properties of such calls, it seems likely that their evolution has in part been driven by their capacity to carry emotional information. The Neo-Expressivist interpretation of the internalist link between the a-expression of some motivational state and the s-expression of some propositional content opens up a new facet of inquiry with respect to animal communication: investigations into what particular motivational state is a-expressed, what propositional content is s-expressed, and what social function is performed in the utterance of some animal signal are most fruitfully pursued in concert.

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[1] The requirement that the expressive act be intentional here is only that it is goal-directed, but not that it necessarily involves the goal *of* expressing something (Bar-On and Chrisman in press).

[2] One might question whether animal alarm calls represent content *conventionally* in the appropriate sense. We hold that, to the extent that such calls are *arbitrarily* related to their contents, they are at least minimally conventional representations.

[3] The conditions that Evans and Marler list for functional referentiality include production specificity, discrete structure, and context independence (Evans and Marler 1995, p. 347). They avoid using 'referential' *simpliciter* because they are concerned about the possibility of empirically investigating additional conditions imposed by various philosophical theories of reference by, e.g., Grice (1957), Quine (1960), and Dretske (1981).

[4] Dissatisfaction with the Gricean framework has also motivated some cognitive ethologists (e.g. Bekoff and Allen 1992) to look toward Millikan's (1984) teleosemantic approach, but it too creates empirical difficulties because it depends on knowledge of natural selection in the distant past that is hard to obtain.