Lionspeak: Communication, Expression, and Meaning

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I. Introduction

A recurring, Sellarsian theme in Jay Rosenberg's work, from his first book, *Linguistic Representation*, to his last, *Wilfrid Sellars: Fusing the Images,* concerns the uniqueness of human linguistic and mental representation and its distinctness from all other forms of animal communication and mentation. Full-fledged human language and thought, so the theme goes, is compositionally structured, intentional, rational, and subject to social norms. It is not merely patterned behavior that is goal- or need-driven, world-directed, and subject to modification via behavioral control or manipulation by co-communicators. Human linguistic communication is different from any known form of non-human communication in being the province of rational agents who act and think within *the space of reasons*. Consequently, all application of our concepts of meaning, semantic content, propositional attitudes, etc. to non-human creatures is at best a matter of analogy or metaphorical extension.

In what follows we engage a number of claims made by Rosenberg and other Sellarsians regarding what separates our systems of communication from any seeming analogues or precursors in the non-human animal kingdom. Our hope is to begin to undermine Rosenberg's (and others') commitment to a fundamental discontinuity between the non-human and the human as part of an attempt to defend Continuity (as we shall call it). Our modest goal here will be to commend to the attention of both opponents and proponents of Continuity a rich and complex yet under-studied domain of behavior – *expressive behavior*. Proper study of expressive behavior, we believe, promises to illuminate important and perhaps unexpected ways in which the linguistic and non-linguistic may lie on a natural continuum.

II. A Gricean Route from Natural to Non-natural Meaning

First a detour through familiar territory. A typical utterance of a sentence of English, such as "It's raining", tells of a particular worldly condition. In its normal use, it expresses the proposition (or thought) that it's raining at a certain time in the vicinity of the speaker in virtue of its *linguistic meaning*. Ever since Plato's *Cratylus*, philosophers generally accept a sharp division between the way a sentence is paired up with a particular meaning, on the one hand, and the way, say, the appearance of dark clouds in the sky is 'paired up' with rainy conditions. Loosely speaking, both the sentence "It's raining" and the clouds may be said to *represent* rain, or convey information about its imminent presence. But they do so in radically different ways. For Grice (1957), the clouds represent rain in virtue of a *natural* relation – a stable correlation between the presence of dark clouds and the coming of rain – which allows informed observers to treat the former as a *reliable indicator* of the latter. By contrast, a typical utterance of the English sentence exhibits *nonnatural meaning*: representing rain in virtue of a convention or rule associating the sound 'rain' with rain, and being uttered with certain intentions. The Gricean approach purports to explicate nonnatural meaning, and in turn conventional meaning, in psychological terms: speakers invest linguistic signs with meaning by tokening them with certain communicative intentions; repetition and public use then ossify them into conventionally meaningful symbols.

In his "Meaning and Truth", Strawson dubs this the *communication-intention* approach, and contrasts it with the approach of formal semantics, in which linguistic meaning is to be elucidated in terms of a systematic pairing of sentences with their truth-conditions. Strawson's main claim in "Meaning and Truth" is that this Davidsonian thesis, though true and potentially illuminating, simply doesn't go deep enough. We have, of course, the platitude that a speaker "makes a true

statement or assertion if and only if things are as, in making that statement, he states them to be"
(1970: 180). But Strawson insists that we now need an understanding of what it is to make a
statement or an assertion. And he agrees with the communication-intention theorist that this
requires appeal to speakers' intentions of "letting an audience know, or getting it to think, that the
speaker has a certain belief." (1970: 181). The explanatory work, then, is ultimately done not by the
notion of truth, but by the notion of communicative intentions to provide an audience with
information in a special way.[1]

In a critical discussion of Strawson, McDowell (1983) rejects the Gricean assumption that
nonnatural meaning can be *reductively* explained via communicative intentions. But he expresses
sympathy with the idea that a "general account of how language functions" requires making it clear
"that speaking and understanding are primarily the issuing and reception of communication" (1983:
36). McDowell's discussion is of interest to us here because of how he characterizes the "essentially
communicative" dimension of language. In developing the idea, McDowell turns to "modes of
behaviour that we can ascribe to creatures to which we would not think of ascribing intentional
action" (1983: 40) continuing,

> A bird, say, might instinctively emit a characteristic sort of squawk on seeing a predator;
> other birds might acquire, on hearing such a squawk, a propensity towards behaviour
> appropriate to the proximity of a predator (flight, increased caution in feeding, or whatever).
> This propensity might match a propensity they would have acquired if they had seen the
> predator themselves… there is no risk of over-psychologizing our account of the birds –

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[1] For a useful summary, see McDowell (1983) §1.

crediting them with an inner life – if we regard such behaviour as effecting the transmission of information, and hence as constituting a kind of communication. (Ibid, p. 40)[2]

What separates *linguistic* behavior from "this kind of information-transmission", McDowell continues, is the fact that the former is "wholly overt": "In successful linguistic exchange speaker and hearer are mutually aware of the speaker's intentions, in a way that could have no counterpart in merely instinctive responses to stimuli." (1983: 40f.) In other words, linguistic communication, as opposed to mere information-transmission among animals, requires communicative intentions of the sort that make up Grice's speaker meaning.

One might doubt whether the full battery of Gricean intentions are essential to speaker meaning. Green (2007) has argued elsewhere that they are not. Even if that argument succeeds, however, speaker meaning would still represent an impressive cognitive achievement. This is because, as McDowell notes, speaker meaning requires *overtness*, which in turn requires not just an intention to communicate, but also an intention to *publicize* that very intention. McDowell is thus right to find a significant gap between the birds' behavior, on the one hand, and what even very young normal children are capable of.[3] Yet any naturalistically-minded philosopher will feel sure that the gap was not traversed with divine aid. It turns out that Grice worried about this problem, so let's look briefly at what he had to say about it.

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[2] Compare Davidson (2001): Triangulation, the beginnings of thought, "is the result of a threefold interaction, an interaction which is twofold from the point of view of each of the two agents: each is interacting simultaneously with the world and with the other agent. To put this in a slightly different way, each creature learns to correlate the reactions of other creatures with changes or objects in the world to which it also reacts. One sees this in its simplest form in a school of fish, where each fish reacts almost instantaneously to the motions of the others. This is apparently a reaction that is wired in. A learned reaction can be observed in certain monkeys which make three distinguishable sounds depending on whether they see a snake, an eagle, or a lion approaching; the other monkeys, perhaps without seeing the threat themselves, react to the warning sounds in ways appropriate to the different dangers, by climbing trees, running, or hiding" (128). Nevertheless, Davidson immediately reiterates his skeptical attitude towards mere-animal thought: "But on reflection we realize that the behavior of these primates, complex and purposeful as it is, cannot be due to propositional beliefs, desires, or intentions, nor does their mode of communication constitute a language" (128).

Compare also Brandom (2000), chapter 1 and *passim*.

[3] Though, as we suggest later, McDowell may be wrong in characterizing the birds' behavior as involving *only* the instinctive transmission of information.

In "Meaning" (1957), Grice aimed to capture the difference between natural and nonnatural meaning, and, at least on standard interpretations, proposed a conceptual analysis of nonnatural meaning. By contrast, in his 1989 "Meaning Revisited", Grice attempts to portray "nonnatural meaning as descendant [and] … derivative from … cases of natural meaning" (1989: 292). In that article Grice can be seen as answering a question closely related to our main concern here, namely: How could nonnatural meaning, as paradigmatically exemplified in human communication, arise in a world of natural signs? Put in these Gricean terms, the Sellarsian opposition to Continuity would take the form of simply denying that there is a philosophically illuminating answer to this question.[4] The Sellarsian skeptic will, of course, agree that in 'the order of being', linguistic behavior that is endowed with nonnatural meaning must be preceded by forms of behavior, so abundant in the nonhuman world, that possess only natural meaning. But she would insist that from this it doesn't follow that we can get conceptual purchase on nonnatural meaning – the hallmark of human linguistic communication – by portraying it as an elaboration on these forms of nonlinguistic behavior. In 'the order of understanding', the Sellarsian might say, nonnatural meaning is *sui generis*.[5]

Grice's "Meaning Revisited", which may be read as an attempt to respond to this challenge, is largely devoted to offering what we shall call 'the Myth of X': a story about how a creature, X, who has a relatively rich behavioral repertoire, including elements possessing natural meaning, could "end up with something which is very much like nonnatural meaning" (*ibid.*). This myth is plausibly to be construed *not* as a conceptual analysis, or reductive account, but rather as a diachronic, or 'genetic' Continuity story depicting a continuum of animal behavior, beginning with bits of behaviors possessing only natural meaning, through utterances endowed with individual speaker meaning, to full-blown conventional linguistic meaning. Such a story aims to offer a 'natural

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[4] Compare Davidson's argument in 'The Emergence of Thought' (in his 2001).

[5] See Sellars (1963). .

reconstruction' of a path creatures initially capable only of engaging in behavior endowed with natural meaning could take to linguistic behavior. A natural reconstruction, as we think of it, does not explain the emergence of linguistic meaning (and the representational capacities that subserve it) by merely locating increasingly complex stages on a continuum. It also tries to show how each stage develops from an earlier one in some intelligible way. One such way would involve an agent or group of agents making choices that realize a more developed form of meaning; another would involve a process such as evolution by natural selection. Grice's Continuity story is of the former type; and, as we'll see, it is vulnerable to criticism from the Sellarsian. This will raise the question whether another Continuity account may be given that is not vulnerable in this way.[6]

Grice's Myth of X begins with a creature X who nonvoluntarily produces behavior that naturally indicates that it is in some state (say, pain). Grice then takes X through six stages that would allow him "to end up with something … very much like nonnatural meaning" (1989: 292). At the first stage, X produces *voluntarily* behavior whose nonvoluntary production would naturally indicate that X is in the relevant state. For example, X might emit a yelp to get his audience, Y, to come to think he's in pain. Grice imagines that, at a subsequent stage, X's audience, Y, *recognizes* that X's performance is voluntary, and can see it as *open* (or "wholly overt", to use McDowell's phrase): although X's behavior is 'put on', he's letting Y see that it is put on and Y realizes it. The next stages have X and Y involved in a complicated game of transmitting and receiving information in which X not only intends Y to recognize his communicative intention, but also intends Y to take this intention to be a sufficient reason for believing that he, X, is in the relevant state. At the final stage,

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[6] 'Natural reconstructions' of the emergence of particular human phenomena of interest are often offered by philosophers. *Cf.* Quine (1973) (where he reconstructs the emergence of reference to objects both ontogenetically and phylogenetically), Sellars (1956) (where he introduces his famous 'Myth of Jones' to reconstruct the emergence of mental state attributions), and Gibbard (1992) (where he reconstructs the emergence of ethical language and concepts). Such reconstructions do not typically offer a natural *history* of the relevant phenomena. Nevertheless, they can be potentially useful for the empirical study of the relevant phenomena provided they meet certain constraints.

X reverts to producing some vehicle of communication – a bit of behavior or device – which is *not* a natural sign, but is more loosely connected to the message to be conveyed, in a way that is in some way discernible way by Y. At this final stage, we have a communicative vehicle invested with speaker meaning as Grice conceives it. Once a repertoire of such communicative vehicles is developed, our creature may well be on his way to linguistic meaning as we know it.

Here then we have *a* continuity story. But would it satisfy the Sellarsian skeptic? An obvious difficulty is that the story requires imputing to X very complicated other-directed intentions. (To use contemporary parlance, X must possess a 'theory of mind' with nested 'metarepresentations'.) How feasible is it to attribute these sorts of intention to nonhuman animals, or to other members of the genus *Homo* who may lack language? For that matter, how feasible is it to attribute such intentions to a prelinguistic child?

III. Sellarsian Objections to Griceean Continuity

Following Sellars, Rosenberg levels a related objection intended to strike at the heart of what he labels "agent semantics":

> If thought *is* a representational system analogous to public language, then it cannot be appealed to to *explain* how representational systems succeed in representing a world. Whatever the merits of agent semantics as a component in an account of public linguistic *performances*, the analysis of *representation* must be conducted at a level undercutting the distinction between the overt and the covert, between public language and thought. (1974: 28)

The concern is that an explanation of linguistic in terms of mental representation presupposes what is to be explained. We might, however, doubt whether it must. After all, many models account for phenomena by being analogous to them. What is more, Grice is not offering a general account of

representation (or of "how representational systems succeed in representing a world", as Rosenberg puts it), but rather only an account of representation and, more generally, meaning as they are found in language. Grice may reply to Rosenberg, then, by suggesting that so long as mental representation is more fundamental than linguistic representation, he is within his rights to try to explain the latter in terms of the former.

The issue remains whether the Gricean strategy is feasible. The Myth of X requires that prior to the emergence of nonnatural meaning there be creatures capable of thoughts, beliefs, and intentions, evidently with full-dress, structured propositional contents. Davidson has famously cast doubt on the prospects of ascribing such contents independently of our interpreting an agent's utterances.[7] The Sellarsian skeptic will likewise point out that our understanding of the psychological states that put X on his way to linguistic meaning is itself parasitic on our understanding of the (nonnatural) semantic properties of paradigmatically linguistic utterances. Thus, even if the Myth of X were correctly to capture something about the causal order of the development of human language, it would do very little to enhance our understanding of how linguistic meaning came to be.[8]

None of this, however, precludes the Myth of X from invoking more basic mental states whose contents could be understood in some other way than on the model of sentential meanings (and thus would not require invoking nonnatural semantic properties of mental representations). Indeed, 'content functionalism' proposes that the content of so-called primitive psychological states (and not just their attitudinal profile, as e.g. beliefs vs. desires) can be fixed by the functional roles they play in the behavioral economy of a creature. So, for example, a creature lacking a semantically

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[7] See, e.g., Davidson's 'Rational Animals' and 'The Emergence of Thought' in his (2001).

[8] Compare Rosenberg 2007: 187 ff. on the relation between thought episodes and linguistic utterances in Sellars' Myth of Jones.

structured mental representation system may still be in an internal state qualifying as a primitive belief that there's food about (or that there's something edible here, or …) simply because that state is caused by the presence of food and causes certain specific kinds of food pursuing behavior (as well as other creaturely states).[9]

This content functionalist suggestion in fact resonates with some of Sellars' own ideas about assigning content to the mental states of non-linguistic animals. Sellars offers a strategy for applying our semantic concepts to animal representational systems ("RSs"). As Rosenberg elucidates Sellars,[10] "[a]n animal RS will be instantiated in a family of *representational states*, and a state will count as representational just in case—and *because*—it is suitably implicated in analogues to our language-entries, language-exits, and intra-linguistic moves". Thus an animal can respond to a sensory stimulus with perceptual awareness, which is the analogue of a language-entry transition, or 'move' (e.g., after suitable training, an animal can come to be in a 'This is a triangle' state by virtue of "being irradiated by a triangular object," as Sellars puts it). The analogues of our intra-linguistic transitions are the animal's 'primitive inferences', which are Humean associations of ideas: there is a certain pattern of states following or not following certain other states. So, animal RSs are systems composed of states that follow certain patterns of succession, are caused by sensory stimulation and lead (ultimately) to distinct behaviors (the analogue of 'language exit moves'). Following Sellars, Rosenberg emphasizes that "for both human language-users and animal RSs, an appropriate inferential embedding is what differentiates items (e.g., states, thoughts, or utterances) which count as

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[9] Field (1978) and Loar (1982), for example, have proposed accounts along these lines. Content functionalism has to face objections from semantic externalists, who would point out that, by standards of intuitive semantics, the content of one and the same type of internal state, functionally specified, could have completely distinct semantic contents, depending on whether the organism is, for example, on earth or on twin earth. For an externalist attack on content functionalism, see Fodor and LePore (1992).

[10] Rosenberg 2008: 108ff.

(representational) awarenesses "*of* something *as* something (e.g., *of* an object, a, *as* being F) from items that are mere responses *to* something that *is* something (e.g., *to* an object, a, that *is* F)".[11]

One might think that a Sellarsian would accept the above strategy as enabling us to see how we can reasonably credit a non-linguistic creature with primitively contentful representational states. An animal's state can be seen as representational if we can regard it as picking out an object and characterizing it. Moreover, it must pick out that object in a way that makes it (the analogue of) a subject of (the analogue of) predication/classification. For Sellars, both the referential and characterizing roles of this state are carried out through 'primitive inferences' and through connections to pattern-governed behavior. A state can be regarded as classifying/representing an object as being of a certain sort by being at the intersection of two patterns, one a pattern connected to the animal's strategy for finding a particular object, the other a pattern connected to the animal's strategy for finding objects of a certain kind.

Sellars even elucidates the possibility of a primitive level of mental representation with a helpful distinction between *propositional* and *logical* form. To this end he suggests that a single state, *which may not have any distinct parts or components corresponding to referential or predicative parts of speech*, may nevertheless have propositional form insofar as it has both a referential and characterizing function. A single state (or symbol, for that matter) may have both a predicative and characterizing function by virtue of its multiple *aspects* rather than its distinct *parts*. As Rosenberg illustrates, an italicized 'b' – *b* – may refer to the object b by virtue of its shape and characterize it as red by virtue of its being italicized, for example. Such a symbol, again, may have *propositional* form even though it has no *logical* form – no distinct parts corresponding to referential and characterizing functions, and which can be

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[11] "Thus a rat's ϕ-state wouldn't be a state of representing something *as* a triangle, unless it [i.e., the rat] had the propensity to move from the ϕ-state to another state which counts as a primitive form of representing it [i.e., the "something"] as 3-sided or as having, say, pointed edges." (Sellars 1981: 336)

split apart and recombined with other symbols to form new sentences. Similarly, suppose 'a' refers to a, 'b' to b, italicization represents something as red, bold represents something as blue and one symbol being left of the other represents it being larger than the other. In this case, '*a***b**', picks out and characterizes a, b and their relation by virtue of instantiating certain properties and relationships. It is by virtue of the various aspects of '*a***b**' rather than its compositional structure, that the symbol characterizes a, b, and their interrelation.

The aforementioned machinery should, it seems, allow the Sellarsian to credit non-linguistic animals with mental states possessing at least 'primitive semantic content'. States that have propositional (though not logical) form along the above lines, it might be thought, are not mere 'realizers' of an animal's specific discriminatory propensities – i.e., dispositions to treat differently, say, what *we* would describe as food and non-food, or what *we* would regard as different types of food. It seems, in fact, that with the distinction between propositional and logical form as articulated by Sellars we gain the needed psychological starting point of semantically evaluable representational states. And yet the Sellarsian insists that (as Rosenberg puts it) "[t]he primary use of our semantic concepts is to classify and characterize elements (items, functions, aspects) of our own *human natural languages.* Their application to animal RSs will consequently be essentially analogical." (Rosenberg 2007: 108). [12,13]

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[12] Another Sellarsian contrast may be relevant here (see Sellars (1969)). Ought-to-do rules or norms require the subject of such 'oughts' to have the concepts of the circumstances in which they are supposed to carry out their duty as well as the concept of what is to be done. Ought-to-be rules or norms, by contrast, carry no such requirement. The former kinds of rules therefore require their subjects to have the higher-order mental concepts required by a Gricean continuity story. The Sellarsian seems to want to insist that the states of animals without such higher order concepts will only be analogous to the genuine thoughts because the norms which partly constitute such states of the animals will not be the same as those that govern ours; mere-animal states will be constituted by their connection to ought-to-be norms whereas ours will also be constituted by connections to ought-to-do norms.

[13] In this vein, Davidson says: "[B]eing able to discriminate cats is not the same thing as having the concept of a cat. You have the concept of a cat only if you can make sense of the idea of *misapplying* the concept, of believing or judging that something is a cat which is not a cat. To have the concept of a cat, you must have the concept of an animal, or at least of a continuing physical object, the concept of an object that moves in certain ways, something that can move freely in its environment, something that has sensations. There is no fixed list of things you have to know about, or

It seems to us that the Sellarsian is here giving with one hand and taking away with the other. After all, crediting an animal with primitively contentful representational states does not require or imply taking these states to be full-blown *thoughts* or *judgments* subject to all our logical and epistemic norms of inference or justification. The proponent of Continuity can grant that languageless creatures stand outside the 'space of reasons' (be it theoretical or practical reason). Yet if her task is not that of naturalizing reason (no more than it is to naturalize representation), but rather the more modest one of charting a path that could put a languageless creature on her way to language, the Sellarsian has yet to show that her way will be blocked.

One may nonetheless have misgivings about the *Gricean* version of the Continuity story. What allows Grice's X to move beyond natural meaning is his satisfying what Grice regards as the necessary conditions on speaker meaning. (X deliberately *gives* meaning to some sign by e.g., producing a gesture with the intention of conveying to his audience that there's danger nearby in the distinctive Gricean way.) And it's not unreasonable to wonder how a creature endowed only with 'primitively contentful' representational states can come to satisfy these conditions.[14]

IV. Lionspeak, Expression, and Communication

Stage I of the Myth of X does not reach all the way down to the rudiments of natural meaning; it doesn't begin with red spots, which naturally mean measles, or deer tracks, which

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associate with, felinity; but unless you have a lot of beliefs about what a cat is, you don't have the concept of a cat" (2001: 124) And compare Brandom (2000) *passim*.

[14] We shall return to the Sellarsian objection to the Gricean story in the next section. It is worth noting, however, an assumption *shared* between the Gricean proponent of Continuity and his Sellarsain opponent. This is the assumption that the appropriate starting point for a Continuity story would be psychological states whose function is to represent, record, or register information about the world (including information about creatures' own states); and that what would put a creature on a path to linguistic meaning would need to be the deliberate, rational attempt to transmit, or communicate that information to interested others. This assumption is made quite explicit in the first section of Grice's "Meaning Revisited". Rosenberg (2007), esp. Chapter 5 ("Sellarsian Picturing") gives a very helpful presentation of the central role of representation in Sellars' philosophy of mind and language. In [in progress] we challenge this assumption.

naturally indicate the presence of deer. It doesn't even begin with bee dances, which carry elaborate and systematic information about nearby honey and its concentration, or with McDowell's construal of bird calls, which are instinctively produced in the presence of certain predators. Rather, Grice's Myth begins with a rather special instance of natural meaning: a bit of behavior that *expresses* one of X's mental states. We'd like to suggest that a closer look at the domain of expressive behavior, not from the armchair, but in an ethological setting, may be helpful when trying to construct a cogent Continuity story, one that could conceivably weaken the Sellarsian resistance. What is of interest about expressive behavior, in the context of trying to tell a plausible Continuity story, is that it exhibits a promising degree of richness and sophistication, without requiring (for either its production *or* its reception) the Gricean apparatus of highly complex cognitive states, including other-directed nested intentions.[15]

In an elegant short piece, "Speaking Lions", while reflecting on Wittgenstein's dictum "If a lion could speak, we could not understand him", Rosenberg turns to consider natural expressions of pain. He contrasts such expressions with truth-assessable reports, remarking:

> About expressive behavior – about writhing and groaning, wincing and limping – I can ask only whether it be genuine or feigned, authentic or mere pretense. … No claim to truth has been made. Something is being done, not said. (p. 158)

Recall that Grice, too, assigns a pivotal role for expressive behavior in his Myth of X: what initially puts X on his road to nonnatural speaker meaning is his nonvoluntarily wincing in pain. Similarly, in the above passage Rosenberg appears to suggest that what may put us on our way to understanding

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[15] In addition, in [in progress], we argue that, though expressive behavior as we construe it is very often communicative, its primary purpose is not the conveying or transmission of information (either about the expresser or about her environment). Rather than being designed to *tell* or provide evidence for how things are, it is designed to *show* states of mind of expressers *so as to enjoin others to appropriate action* in their observers. And this is done in a way that does not require in every case mediation via the observer's *belief* about the expresser's state of mind.

a lion is not the deciphering of reports made in Lionspeak, but rather learning to read the lion's expressive behavior. Or at any rate, that whatever problem there is with understanding a lion, it would have to do, in the first instance, with 'taking the measure of a lion' (as Rosenberg puts it), which is a matter of being at home with how he expresses himself. If this is the suggestion, then we'd like to endorse it as a starting point.

However, as we consider moving beyond this initial point, it emerges that the domain of expressive behavior is heterogeneous. In addition to what we might call natural expressions (i.e., vocalizations, facial expressions, bodily demeanor or gestures, etc.), where the connection to the expressed states is set up by nature, conventions can also enable expression: tipping one's hat, shaking hands, showing a middle finger. As Rosenberg points out, I can express my pain not only by wincing or writhing; I can say: "Ouch!" or "This hurts!", or avow "I'm in pain". There is a sense in which in all these cases what is *done* is the same: I give vent to my pain. But in each case I use a different expressive vehicle (a facial or bodily configuration, a vocal pattern, a sentence token). For our purposes here, it will be useful to distinguish between, on the one hand, the way in which a *sentence* or a mental state expresses a *proposition* – what Sellars calls 'expression *in the semantic sense*' (*s-expression*, for short) and the way in which a bit of behavior expresses an expresser's *state of mind* (*m-expression*, for short). Behavior might express a state of mind involuntarily (as when one grimaces uncontrollably in response to severe pain), non-voluntarily (as when one grimaces as a natural response to pain in spite of the fact that one could prevent this response if one chose), or voluntarily (as when one grimaces as a result of a decision to do so). We shall use 'm-expression' to refer to any of these three types of case.[16]

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[16] The division of expression into semantic and other types is due to Sellars 1969. However, we do not here adopt his further division between what he calls "expression in the causal sense" and "expression in the action sense". One reason is that whereas Sellars takes the former "sense" as exemplified by a causal relation between a mental state

So-called natural expressions – behaviors such as baring teeth, grunting, scowling, blushing, clenching fists, trembling, tearing up, intonational fluctuations – typically do not require performing any action intentionally. These are behaviors that contemporary experimental psychology would describe as automatic, rather than consciously undertaken or willed;[17] and they are caused by the state they express. Nonetheless, such behavior is importantly different from mere reliable indication, like smoke, or deer tracks, as well as physiological symptoms, like red spots, or sneezes in ways we canvass below.[18] In other words so-called natural expressions form a special sub-category within the Gricean category of natural meaning.

This is something the Gricean proponent of Continuity can acknowledge. What it means is that, in the above Myth we should see the first stage on X's way to nonnatural meaning as beginning with involuntary m-expression. Grice, however, takes X from naturally expressive behavior more or less directly to speaker meaning: quite early on, X *recognizes* her own behavior as expressing her mental states, and intends to communicate that mental state to Y by relying on Y's recognition of that very intention. Yet Sellarsian skepticism would strike earlier in the story. It would question X's transition *to* speaker meaning. The Sellarsian may grant that once we understand how a creature becomes capable of speaker meaning – which is itself a special kind of m-expression[19] – we could perhaps understand how sentences come to s-express propositions. This could be achieved via a

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and a bit of behavior, we doubt such a relation is sufficient for expression: a galvanic skin response is caused by but does not express arousal. (See Bar-On 2004, esp. Ch. VII, and Green (2007) for further discussion.)

In his (2000), Robert Brandom invokes a notion of expression central to his "constitutive, pragmatist, relationally linguistic, conceptual expressivism" (p.9). The relation of Brandom's notion of expression to the forms of expression we discuss here is a bit delicate, but as far as we can tell, his notion is a special case of what we have called s-expression. For Brandom, expressing is making explicit something that is implicit in human practice by conceptualizing it. And the paradigm of the conceptualization in question, for Brandom, is "*saying* something… in the sense of claiming" (p.13).

[17] According to a recent suggestion – "the unbearable automaticity of being" – due to Bargh (1999), a great deal of our behavior, including our communicative behavior, is like that.

[18] For much fuller discussions, see Bar-On (2004), esp. Ch.s VI-VIII, Green (2007), and Green 2009.

[19] See Green 2007 Chapters 3 and 4.

process of conventionally 'fossilizing' speaker meaning. For instance, and roughly, the sentence "Grass is green" could s-express the proposition that grass is green in virtue of the fact that speakers regularly speaker mean (and thereby m-express their belief) that grass is green with utterances of this sentence.[20] But the Sellarsian would point out that this at best allows us to understand s-expression as it applies to items in a public language, provided we understand s-expression as it applies to the mental states that speakers intend to convey to their audience. For the Gricean Continuity story appeals to X's intention to communicate via her m-expressive behavior *propositional* attitudes – which are states endowed with powers of s-expression all on their own. The Sellarsian challenge is thus: how can a Continuity story be told that takes us from creatures engaging in naturally expressive behavior – *prior to the introduction of speaker meaning* – to creatures like us who engage in linguistic communication? In what follows we suggest one way in which such a story might be developed.

V. Ethology, Communication, and Expression

Some apparatus from the evolutionary biology of communication will help us traverse some of the ground that the just-mooted Continuity story must cover. A core issue in that field concerns the conditions under which signaling systems are *stable*. Where signalers' interests are at least roughly coordinate, they have no incentive to deceive one another. Humans and honeyguide birds (*Indicator indicator*), for instance, depend on one another to find and destroy beehives, and neither has a motive for deception (Isack and Reyer 1989). As a result, we may expect honeyguide signals directed toward humans to be reliable. In more agonistic situations, creatures derive an advantage from deceptive signaling. To escape predation some anurans bear bright colors even when they are neither poisonous nor noxious. Although in any given case a signal can misrepresent, the stability

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[20] For the notion of 'fossilized speaker meanings' see Blackburn (1984) Ch. 4, as well as Bar-On (1995).

over time of any signaling system mandates that it be on the whole reliable. The proliferation of "cheating" frogs, who bear bright colors without being noxious, would threaten, over time, to make frog coloration something predators can ignore Natural selection thus tends to find ways of vouchsafing the veracity of signals among creatures whose interests are not coordinate.

Here is some terminology to help articulate this last thought. A *cue* is any feature of an entity that conveys information (including misinformation). That information might pertain to how things were, how things are, how things will be, or how things ought to be.[21] A *signal* is a cue that was designed for its ability to convey the information it does. The design in question may be the result of natural selection, artificial selection, or conscious intention. Not all signals are reliable, but for those that are, their reliability is sometimes vouchsafed in beautifully simple ways. For instance, funnel-web spiders, *Agelenopsis aperta*, find themselves in contests over webs. Two spiders will vibrate on a disputed web.   Reichert 1984 found that if two contesting spiders differ in weight by 10% or more, the lighter spider retreats 90% of the time rather than fighting. Furthermore, a losing spider can be made into a winner by placing a weight on its back. This strongly suggests that vibrating on a web is a spider's signal of its size. What's more, in the absence of scientists placing weights on their backs, funnel-web spiders can't fake these signals. Signals that can only be faked with great difficulty as a result of physical limitations on the organism are *indices*.

An index not only signals some property of the organism; it also shows that property: the extent of the spider's vibration shows the spider's size, and thereby its resource holding potential (RHP). Further, it is its ability to show, rather than merely signal, this property that vouchsafes the stability of this signaling strategy. Yet if natural expressions are signals, then they are not merely

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[21] Strictly, whether something is a cue, and of what, is relative both to the receiving organism and its ecological niche: our preferred usage is *C cues information I relative to receiver R in niche N*. That is why paw prints are cues of a predator's presence for you or me but not for an aphid; it is also why pheremones are cues of an ant's presence for aphids but not for you or me. Nevertheless, to facilitate presentation we will here elide these details.

behavioral symptoms of the mental states that cause them: instead, they are a species of communicative behavior. The organisms we encounter in our natural environment all exhibit symptoms of various conditions they are in; but not all organisms exhibit behaviors *designed* to communicate the presence and character of their conditions to some designated audience. Expressive behavior does just this. What's more, we intuitively think of expressive behavior as showing what's within the expresser: In expressing my anger I show it, and so on for many other cognitive, affective and experiential states. If this is right, then given what we've said thus far, a natural expression is also an index.

Expressive behavior may be automatic rather than willed, and may even happen against one's will rather than in accordance with it. Through expressive behavior a creature manifests or displays various aspects of its inner life, be it an emotion, a cognitive state, or an experiential state. That "inner life", however, typically will have its own complexity. For instance, a state of fear will embody a certain disposition to act, but will also be directed upon some object or affair, thereby exhibiting a familiar duality of modality and content. Expressing one's fear, then, might involve indexing both dimensions of this affective state. The "modality" side might be indexed with a facial expression or tone of voice; the "content" side might be indexed with a way of drawing a viewer's attention to the object of that fear: a predator, a fire, or what have you. One might draw attention to an object or state of affairs with a gesture, bodily orientation, or even something as simple as gaze. Put together a directed gaze with a terrified face and a shriek, and you have a pretty good approximation to a creature expressing a fear of something particular—for instance its *hawk-terror*.

What makes expressive behavior reliable, that is, an index rather than just a signal? Sometimes reliability is due to a confluence of interests, such as we noticed above in the case of honeyguide/human interaction. In other cases, expressive reliability is due to its automaticity: many expressive behaviors simply befall us and other creatures, and their occurrence is for that reason a

reliable indication of what they signal. (Think of blushing and tears for the non-thespian, human case.) In addition, expressive behavior is the stock-in-trade of social creatures. Among the more sophisticated social creatures, various members of a group have one or another kind of standing or *status*. Social mammals such as wolves, baboons, and many others are hierarchical, so that one's status in a group is all-important. That status will determine things like feeding order, mate choice and grooming protocols, and among many social creatures, one's reliability in signaling is followed as well.[22] Reliability in expressive behavior will, then, be secured in a "crying wolf" way: those who are unreliable are eventually called out, whence those who have not been can be presumed reliable.

We propose, accordingly, that naturally expressive behavior is *designed (*in a biological sense) *to show* the presence, kind, degree and object of an expresser's states of mind to suitably endowed consumers/recipients (typically, conspecifics) so as to enjoin them to act in appropriate ways. Yet the structure and success of expressive behavior requires neither intentions to communicate or transmit information nor cognitively sophisticated interpretation. Expressive behavior can show the presence and character of an animal's state in a way that moves observers to appropriate action without the animal *intending* to tell that things are thus and so—indeed without having a concept of other minds at all. Further, insofar as natural expressions are products of co-evolution between signaler and receiver, recipients of such expressions may also exploit sensitivities thereto without any interpretation or intentional intervention. The production and uptake of naturally expressive behavior thus place considerably weaker demands on the cognitive capacities of the expresser as well as the recipient, than, e.g., Grice places on creature X and his audience.[23,24]

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[22] Cheney and Seyfarth 1988. For a detailed study of social hierarchies among baboons, see Cheney and Seyfarth 2007.

[23] What allows expressive behavior to move observers to action? For all we have argued here, expressive behavior may achieve its purpose by conveying to the observers information about the expresser's state of mind, or the expresser's impending action. On this, more conservative 'information-communication' view, the intake of expressive behavior leads its observer to form a belief, which coupled with the observer's desires, would lead to the appropriate

So far we've described behaviors ethologists call *affective displays*, which are routinely contrasted with behaviors that have proper *semantics* (or are at least *'functionally referential'*). Using our earlier terminology, an affective display m-expresses a creature's state, but its *product* – a certain behavioral pattern – is not like an English sentence; it need not be construed as expressing a proposition. Yet as we saw, so-called emotional displays are *janus-faced:* a frightened facial expression manifests the animal's state of fear, pointing inwards, as it were; but with the aid of direction of gaze, it also draws attention outward, to the fear's intentional object, thereby enjoining appropriate action on the part of the behavior's 'recipients'. This, we suggest, allows expressive behavior to acquire at least *proto-semantic* properties. In the next section we draw out this line of thought by revisiting the case of avian calls.

VI. Avian Calls as a Case Study in Expressive Behavior

In a survey of a half-century of ethological research, Marler (2004) considers various forms of *bird calls* (as distinct from bird songs, which tends to be longer and more acoustically complex). In the chaffinch, calls have the following functions: courtship, aggression, predator alarm, announcement and exchange of food, distress, and group proximity maintenance. (There may also be a 'regenruf', predicting rain.) In the domestic chicken we find a repertoire of about eighteen calls, including those for aerial predators and food. Discussing the predator alarm call across species, Marler writes,

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action. In [in progress] we articulate an alternative view according to which expressive behavior does its work more directly. A cub's cry of hunger enjoins: Feed *me*! A shriek of fear: Flee *this*! Relevant here is Millikan (1995), though our proposal departs from hers in important ways.

[24] In sophisticated and experimentally rigorous work, Tomasello and colleagues (Tomasello 2008 and references therein) offer an account of human language development inspired by the Gricean paradigm. Bar-On and Green (in progress) engages this work in some detail.

If a sudden predatory threat is detected nearby, the most logical response might seem to be to dash for the nearest cover, to freeze, and above all to keep quiet. This is indeed an accurate description of a few birds…but for one striking fact. Birds that keep silent, whatever the danger, are very much in a minority. It is a mark of avian sociality that almost all birds possess alarm calls as key components in their suite of antipredator responses. (2004: 138).

Marler notes that in some species a given call can double as an alarm or contact call. In other species, the call contains an acoustic signature identifying the caller; in others, not. Again, some of the acoustic features of calls can be predicted by their function. For instance, Marler observes that a predator alarm call should be, and in fact typically is, designed in such a way as to make detection of the caller difficult. (It tends to be a narrowband pure tone, and pitched high in a range where aerial predators such as hawks cannot hear very well.) Indeed, many species have converged on the "seet" alarm, which has precisely such acoustic properties.

Many birds, including galliforms, use food calls, and among domestic chickens the rooster calls to females to offer morsels of food. Evans and Evans (1990, 2007) also document that roosters sometimes call deceptively, holding a twig in their beak while calling to a female. What is more, for a short period (up to 24 hours) females behave as if they remember having been deceived, and respond to deceiving males less eagerly.

Birds often vocalize during or prior to aggression in addition to exhibiting the well-known "head forward" display. The vocalization tends to be in a lower register, and the lowness of register is correlated with body size and thus RHP. This suggests that aggressive vocalizations are indices in the sense we defined above.

Marler suggests that some calls are "functionally referential", while others such as alarm and aggression calls behave more like emotional displays (2004: 175). Rather than infer that the latter are comparatively impoverished, Marler makes a fascinating suggestion:

> With careful study, we find that communication by emotional displays can be very complex, especially when prevarication is involved…Furthermore, if a bird couples a call with some kind of indexing behavior, such as head-pointing or gaze direction, a certain object or point in space or particular group member can be precisely specified: the combination adds significantly to the communicative potential of emotion-based signals. (2004: 176)

This is close to the picture we have been developing here. We suggest that a bird's alarm call is best understood not, à la McDowell, simply as an instinctive act of transmitting information about the presence of a predator. For this ignores the expressive dimension of alarm calls. Using our earlier terminology, a bird's alarm call m-expresses a bird's affective state. A hypothesis about such m-expressive acts is that they serve a distinctive purpose in the lives of social, minded creatures: to show the expresser's state of mind to a suitably endowed observer so as to move the observer to appropriate action. Even without head-pointing or gaze, an alarm call, for instance, is directed at a particular predator, in virtue of expressing a complex state of mind (mild/intense fear *of x*). But the state's complexity need not be construed along the lines of the complexity of propositional attitudes (viz., having a particular psychological attitude – e.g. being afraid – toward a propositional representation of a worldly state of affairs, e.g. *that a bird from above is about to attack*). Instead it could be understood as a *non-propositional, yet still intentional* affective state.

To elaborate: states such as fear of x, anger at y, excitement about z, unlike purely phenomenal states (like distress, hunger, or fatigue), are *directed at* specific objects or situations, without however involving a propositional characterization of x, y, or z. (Such states may, of course,

have propositional analogues/relatives. One may be afraid that x is moving too fast, angry that y is coming too close, excited by the fact that z is about to give one a treat. But, intuitively, just as some psychological states – fatigue, hunger, thirst, general malaise – have no intentional objects, there are more purely affective states that do not have propositions as their intentional objects. It would take argument to show that all affective states must *au fond* be propositional attitudes.) What justifies attribution of such states is their ability to explain and predict animal behavior.[25] Further, if we accept that affective states can be directed at objects or situations – and thus be intentional– albeit without being propositional, the behavior that expresses these states can plausibly be seen as inheriting their intentional dimension.[26]

Much of the behavior we recognize as expressive behavior in animals expresses affective states. If we are right, such states have a certain complexity, one aspect of which is their having an intentional object, though not propositional content. To say that a state is complex is of course not to say that it has *parts* or components that correspond to the dimensions or aspects of complexity. Similarly, a bit of behavior– such as an alarm call – that expresses a complex affective state may also lack composite structure. Marler's suggestion, which we endorse, is that a bird's alarm call can and often does express not only the bird's fear but also reveals the fear's intentional content. Similar points apply to calls of aggression, as well as to hens' food calls. Understanding this suggestion may give us some purchase on what renders expressive behavior an apt candidate for being a precursor of linguistic behavior.

An alarm call can be seen as an act that m-expresses an animal's affective state, which is a state with a distinctive emotional character as well as intentional object – an emotion, such as fear,

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[25] See Allen and Bekoff 1999 for a fuller defense.

[26] Our skeptic may, of course, insist that having affective states depends on having beliefs regarding their putative intentional objects. (See, e.g., Davidson (2001, *passim*).). Such a view is, however, contrary to recent findings in emotion research. For further discussion see, e.g., Griffiths (1998).

anger, affection, directed at a specific object or situation. We can perhaps think of such acts as originating in something akin to a gasp of fear and subsequently becoming gradually both more stylized and more refined, so as to culminate in the range of calls described by Marler, which have distinct, learnable acoustic profiles, distinguishable according to broad types of threats occasioning them.[27] Thus, a hawk alarm call is a great deal like "Hawk!" uttered fearfully (where "Hawk!" is understood as a one-word sentence, with no structure, and with sub-propositional semantic content). But alarm calls can be dissociated from the affective states that are m-expressed in acts of producing them. (Indeed, the vocal patterns can be reproduced in the absence of the original expresser.[28]) They can potentially gain currency as 'stand-ins' for the different intentional objects of the states characteristically m-expressed when producing them (that is, different sources of threat – e.g., leopards vs. hawks vs. …). They can become vocal 'signatures': distinctive, repeatable, vocal patterns, part of a repertoire of expressive vehicles.

VII. Some Concluding Remarks

A chief skeptical challenge to Continuity is to explain how the gap between the nonlinguistic and the linguistic could be bridged without crediting nonlinguistic creatures with complex, audience-directed intentions to communicate propositional attitudes. In response to this challenge, a plausible Continuity story must show us how to traverse the palpable distance between the rigid and programmed (albeit impressively complex) encoding characteristic of, say, bee dances, on the one hand, and the complex communication speakers of a language routinely exhibit, on the other hand. Our discussion suggests that even Marler's birds are different from the bees, and a closer

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[27] For a recent study documenting significant refinement of birds' courtship songs over as few as 2-4 generations, see http://www.wired.com/wiredscience/2009/05/songbirdculture/

[28] Relevant here is Cheney and Syfarth discussion in (2007) of playback experiments with Vervet monkeys.

understanding of their behavior shows us how a portion of this distance can be traversed. For example, avian alarm calls, as we have construed them, are not merely instinctive behaviors biologically designed to transmit information to other birds. Instead, we suggested that birds' alarm calls are, in the first instance, expressive behaviors. And expressive behavior amounts to more than mere transmission of information. Such behavior is the hallmark of social, minded creatures, for it is biologically designed to show an animal's state of mind to suitably attuned witnesses so as to move them to act in appropriate ways, perhaps via contagion (or empathy, in more developed creatures) and other mechanisms. When the expressed state of mind is world-directed, so that an act (m-) expressing it articulates its intentional object, appropriate action will involve that object. An alarm call, showing an affective state that is directed at a specific kind of threat will enjoin other birds to, say, run away from that threat. The ground is laid for the behavior's product (in this case a vocal pattern) to take on a (proto-semantic) life of its own and to become a stand-in for the relevant object.

Thus, in the Continuity story we've adumbrated, in contrast with Grice's Continuity story, the behavior that puts non-linguistic creatures on the way to linguistic communication (m-)expresses affective states . Such behavior serves its communicative purpose even in the absence of the animal's intending to communicate information to others, or of the receivers figuring out the producer's intentions. As the case of Marler's birds suggests, such behavior can issue in vocal signatures, which can be seen as rudimentary 'imperatival labels' of the relevant objects. Creatures among whom a small repertoire of such labels has developed - a proto vocabulary - would be at least as much on their way to linguistic communication as Grice's X. Yet they would have no need for Gricean reflexive intentions; nor would their behavior need to be governed by Sellarsian rules of

reason. Expressive behavior thus merits the attention of both proponents and opponents of

Continuity.[29]

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