

## 28

# COMMUNICATIVE INTENTIONS, EXPRESSIVE COMMUNICATION, AND ORIGINS OF MEANING

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Even a cursory look at the literature on animal communication reveals that, on a dominant view, the theoretical task of explaining the evolution of linguistic meaning is to be understood in (at least roughly) Gricean terms. After raising some difficulties for the Gricean approach to the emergence of meaning, I will motivate an alternative conception of the explanatory task, which focuses on the potential of non-Gricean, *expressive communication* for illuminating the origins of meaning. This conception not only seems ethologically plausible and philosophically cogent, but it also renders the puzzle of language evolution more tractable by treating meaningfulness as a multifaceted phenomenon with potentially divergent evolutionary roots.

## The Gricean approach to origins of meaning<sup>1</sup>

To make progress in addressing the puzzle concerning the origins of linguistic meaning, one needs to have a relatively clear sense of the *target* phenomenon – that is, of meaningfulness as it is found in human language. But there is little agreement on what should be taken as the hallmark(s) of linguistic meaningfulness. The following is a (partial) list of different features that have been emphasized as essential to meaning by different theorists: *arbitrariness* or *conventionality*, *stimulus-independence*, *discrete & symbolic* character, *referential displacement* or *intentionality*, *learnability*, *flexibility* and *voluntary control* of use, *communicative intentions* and use of *Theory of Mind*, *cooperative motivation*, possibility of *prevarication*. Some of the features on the list pertain to *acts* of signaling or communicating (e.g. voluntary control, communicative intentions), others pertain to the *products* of such acts, or *vehicles* of communication (e.g. symbolic or arbitrary character, referential displacement). And it is not clear how the various features (or even subsets of them) hang together. Specifically, what does the symbolic or arbitrary character of language have to do with whether or not it's produced with communicative intentions? And what does having displaced reference have to do with learnability or with prevarication? (Indeed, at times it seems that behind the emphases on different features lie rather divergent perspectives on language – viz., thinking of language as a relatively fixed *system* of encoded rules for generating sound-meaning mappings vs. thinking of language in terms of the rational-reflective-cooperative capacities that are manifested in its *use*.)

The heterogeneity of the highlighted features suggests that meaningfulness itself may be a multifaceted phenomenon, with different aspects possibly having different precursors and distributed across various regions of evolutionary space, so to speak. Yet a long tradition with deep philosophical roots invites us to focus on a specific subset of features – those that locate the roots of meaningful language in *individual rational insight or creative invention*. Along these lines, when Darwin turned to discuss the evolution of language, he suggested that what it would take to effect a transition from the purely expressive vocalizations of musical protolanguage to meaningful speech sounds is for “some *unusually wise* ape-like animal” to “have *thought of imitating* the growl of a beast of prey, *so as to indicate to his fellow monkeys* the nature of the expected danger” (1871: 57, emphases added).

In philosophy of language, this theme – of tying the emergence of linguistic intentionality (in Brentano’s sense) to *individual intentions to communicate* – is associated with Paul Grice (1957, 1968, 1989). In the language evolution literature, Grice’s “communication-intention” perspective has been sharply contrasted with the so-called “code model” of communication.<sup>2</sup> As followers of Grice see it, there are at least two (related) features that distinguish human language from paradigmatic codes.

- (i) Human communicators can have elaborate understanding of each other *without* a fixed code, and their communicative interactions have a distinctive, *overt* (or ‘ostensive’) character.

Suppose that, during a performance, my friend catches my eye and scrunches her face in an exaggerated manner, holding her nose. Presumably, she *means that* she hates the performance. And I would normally come to understand that by *recognizing* that she is *intentionally* – but also *openly* and *without deceit* – letting me know how she feels.<sup>3</sup> On the Gricean view, this kind of *overt*ness – whereby speaker and hearer have mutual awareness of the speaker’s intentions, is the hallmark of successful linguistic exchanges.

- (ii) For human communicators, even when a code-like conventional system is in place (i.e., a learned language like English), coded meanings are just the beginning of meaningful linguistic communication.

Suppose you hear someone saying “It was too slow.” You understand the individual words, and their mode of composition, but you understand very little of what the speaker meant. Successful linguistic communication requires – and speakers essentially rely on – *contextual inference*. On the Gricean view, “humans do not just associate a linguistic meaning [with] the sound of a sentence; they also use information on the speech situation, the interlocutors, their past interactions, the background knowledge they share, and so on”; the meanings encoded in utterances at most provide meaningful “fragments . . . without a definite import” (Sperber and Origgi 2010: 124).

So, on the Classical Gricean picture of communication, paradigmatic cases of human communication are built on *overt communicative intentions*, on the part of speakers, and their *reflective contextual interpretation*, on the part of hearers. What Grice called “speaker meaning” is a matter of a speaker producing an utterance (acoustic, written, gestural, or otherwise) with the intentions of

- (a) producing an effect on the psychological states of some receiver, and, further,
- (b) producing the effect in (a) in part *by means of* the receiver’s recognition of that intention.

The relevant communicative intentions can (though they do not *have to*) rely on non-arbitrary “natural meaning,” or on iconic relations. Gricean speaker meaning is also independent of

convention, of compositional structure, and of learnability (or “cultural transmission”). Indeed, on the Gricean view, linguistic *conventions* are to be analyzed as resulting through processes of “ossifying” individual speaker meanings.

The Classical Gricean picture implies that communicators can possess a capacity to form and attribute intentions concerning beliefs, intentions, and other psychological states of creatures other than themselves – a so-called “Theory of Mind” – *before* they have language. However, there is little evidence that even our closest primate relatives are capable of sophisticated awareness of (and concern with) others’ states of mind of the sort required for Gricean communication.<sup>4</sup> (And there are several arguments in the philosophical literature to the effect that, even if first-order intentional states do not require language, *Gricean* mindreading – *which is both recursive and propositional* – does.<sup>5</sup>) But the more evidence we have that nonlinguistic animals (as well as prelinguistic children) lack the full battery of cognitive states required by the Classical Gricean theory, the less plausible this Gricean evolutionary trajectory

### Complex communicative intentions → Speaker meaning → Conventional language

would seem to be. The Gricean trajectory would require our nonhuman ancestors to have crossed a *psychological* Rubicon before they could venture crossing the language Rubicon. This is because they would have had to acquire a psychological capacity for sophisticated “mindreading,” which was not remotely possessed by their nonhuman predecessors, before they could be in a position to engage in Gricean communication (i.e. to issue and interpret utterances with speaker meaning). Yet, from an evolutionary perspective, explaining the presence of a capacity for full-dress Gricean propositional thoughts in some extinct languageless species seems no less problematic than explaining the emergence of language itself.<sup>6</sup> (And this should motivate us to explore alternative trajectories.)

But perhaps the explanatory task facing theories of language evolution can be reconceived. Rather than focusing on the question of what might have motivated our ancestors to become deliberate, reflective Gricean communicators, perhaps we should be looking for ways that *non-Gricean* communication might have gradually evolved so as to take on linguistic character. In the next section, I want to propose that we can be helped in this task by attending to a specific type of non-Gricean communication that we share with many diverse species of nonhuman animals (and not just other great apes): expressive communication.

### Expressive communication and origins of meaning<sup>7</sup>

In a survey of a half-century of ethological research, Peter Marler (2004) examines a wide and impressive range of avian calls, including predator alarm calls, calls for courtship, aggression, announcement and exchange of food, distress, group proximity maintenance, even rain anticipation. Marler suggests that a bird’s alarm call can – and often does – fulfill its communicative role by showing the bird’s fear *at the same time as* it reveals the fear’s intentional content (2004: 176). Similarly, Snowdon has recently argued that chickens’ “food calls can both be referential and communicate an affective state, perhaps of social invitation” (2008: 75).

On Marler’s and Snowdon’s way of understanding them, birds’ alarm calls, though *unlearned*, still prefigure certain semantic and pragmatic aspects of linguistic communication. An alarm call is directed at a predator of a particular type, in virtue of expressing a relatively complex (albeit not compositionally structured) psychological state. The call shows – and its designated audience can recognize – a more or less intense agitation *at*, or fear *of*, a predator of a certain broad type. Coupled with a head tilt or directed gaze, the call can point to a specific predator of the relevant type.

Understood as affective displays, alarm calls belong in a broad class of expressive behaviors – in our own species and others – including growls; hisses and lip-smacks; facial expressions such as those associated with anger, fear, pain, etc.; and bodily demeanor, posture, and various gestures. A threatening growl is not simply a natural sign of its producer’s fierceness (an *index*, in the sense of Maynard Smith and Harper 2003); and it not only represents its producer as possessing a certain resource, but also reveals his readiness to defend it if challenged. A vervet monkey’s alarm call not only indicates the presence of an aerial predator, but also reveals the caller’s fear or agitation, and thereby moves others to take a specific action to avoid the danger. Even one dog’s cowering demeanor upon encountering another will display to a suitably endowed recipient the dog’s fear (kind of state), *how* afraid they are (quality/degree of state), *of* whom they are afraid (the state’s intentional object), and how they are disposed to act (slink away or hide behind its owner’s leg). (Similar remarks apply to dogs’ play bows.) Expressive communication, in general, is in a sense Janus-faced. It points inward, to the psychological state it expresses, at the same time as it points outward, toward the object or event at which the state is directed, as well as toward ensuing behaviors.<sup>8</sup>

“Expressive signals” (as we may call them) differ from mere natural signs, symptoms, and other reliable indicators in terms of their psychological, semantic, and pragmatic profile. The functionally *referential* character of alarm calls has been widely discussed.<sup>9</sup> But some alarm-call systems exhibit a predicative dimension, for the acoustic intensity of an alarm call is closely associated with the perceived level of predator danger. For example, suricates are said to have acoustically different alarm calls in response to different predator types, “but their call structure also varies depending on the level of urgency. (Low urgency calls tend to be harmonic across all predator types, while high urgency calls are noisier)” (Manser 2001: 2315). And prairie dogs, who have distinct calls for dogs, coyotes, hawks, and humans, have been reported to have acoustically distinct calls for humans with different color shirts (Slobodchikoff et al. 2009).<sup>10</sup> In this way, alarm calls may be *functionally predicative* in addition to being functionally referential. Thus, despite not being issued with communicative intentions (we may assume), and despite lacking compositional semantic structure, alarm (and other) calls appear to share an interesting meaning-relevant property with propositional linguistic utterances: they can be systematically differentially keyed to different features of the environment in a way that bears directly on their communicative function and significance.

Inasmuch as expressive signals are *directed at* objects and features of an animal’s environment *as apprehended* (or “psychologically filtered”) by the animal, they contrast with automatic physiological reactions, or hormonally dictated changes, and may be said to exhibit a measure of *intentionality* (in Brentano’s sense). Moreover, experimental evidence suggests that, even if alarm and other calls are not *intentionally produced* (let alone produced in order to affect the audience’s psychological states), their production can be brought under control in many mammals and all primates tested so far, as well as in many birds (a point to which I will later return).<sup>11</sup> And, as suggested earlier, even functionally referential signals can reveal producers’ complex states of mind to suitably attuned receivers. (Note that to say that a state is complex is *not* to say that it has recombinable *parts* or components that correspond to the dimensions or aspects of psychological complexity. Instead, it should be understood as a *non-propositional, yet still world-directed* affective and action-guiding state. Likewise, a behavioral signal that expresses a complex affective state may also lack composite structure.<sup>12</sup>

On the view I advocate, expressive communication is a form of *social, intersubjective, world-directed, and open* communicative behavior that is (not intentionally but) biologically designed to enable expressers to *show* their *intentional states of mind* to suitably endowed observers, so as to move them *to act* in certain ways (toward the expresser or the object of her expressed state),

in part by foretelling the expresser's *impending behavior*.<sup>13</sup> On this view, natural design takes the place of individual audience-directed communicative intentions and reflective inferential interpretations in securing the communicative significance, effectiveness, and openness of expressive communication. The communicative work of expressive communication is done through the spontaneous production of signals that are *designed to manifest* or reveal (rather than conceal; hence "open") complex states of mind of producers, and to *elicit appropriate, active responses* on the part of receivers. The producers themselves do not *intend* to show their states of mind, nor do they rely on their audience's *figuring out* their intentions. The receivers, in turn, do not reflectively interpret the expressive behavior, but are rather in a position to recognize immediately and non-inferentially the states expressed – their presence, intentional object, degree, behavioral profile, etc. – as well as being moved to act in appropriate ways, perhaps via contagion, or "resonance," or empathy and similar mechanisms.

While animal signaling is ubiquitous, not all animals that signal engage in expressive communication. The above characterization seems to go beyond the characterization of signals proposed by Evolutionary Game Theory, by taking into account the *psychological*, and *open-social* underpinnings of specifically *expressive* signals. According to the Expressive Communication (EC) approach, the displays (vocal, facial, gestural, postural, etc.) that comprise the repertoires of creatures capable of expressive communication are designed *openly* to convey information about the environment (as seen through the eyes of a minded producer), to foretell the producer's behavior, and to move the like-minded or relevantly affected audience to appropriate action by, specifically, commanding attention to the expressive performances themselves. This world-directed, intersubjective, and open character of expressive signals gives them a kind of *social natural meaning*. But the social meaningfulness and overtness of expressive signals is not earned through the labor of individual insight or invention. For, in general, animal expressers do not *intentionally express* their states of mind *in order to communicate messages*, and their observers do not make *rational inferences* about the intentions behind the expressive behavior. So *neither* half of the expressive communicative equation is Gricean. Given its non-Gricean character, expressive communication clearly places much weaker demands on the cognitive capacities of both producers and consumers than does full-blown Gricean communication.

Now the expressive character of alarm calls is often seized upon as a way of illustrating the great distance between animal communicative behaviors and language.<sup>14</sup> Tomasello, for example, sees a "sharp contrast" between what he calls "communicative displays" (among which he includes alarm calls), on the one hand, and "communicative signals that are chosen and produced by individual organisms flexibly and strategically for particular social goals, adjusted in various ways for particular circumstances" (2008: 14), on the other hand. He takes it that "the *starting point* for communication from a *psychological point of view*" must lie with signals that are "*intentional* in the sense that the individual controls their use flexibly toward the goal of influencing others" (2008: 14, *emphases added*). It's only when producers begin to attempt to "influence the behavior or psychological states of recipients intentionally" that we "have the starting point for communication from a psychological point of view" (2008: 14).<sup>15</sup>

On the non-Gricean EC approach advocated here, however, expressive behavior, and the kind of communication it affords, form a theoretically significant category of behavior that lies somewhere between the two endpoints Tomasello describes – i.e., *merely reflexive-reactive* affective displays and *fully reflexive-creative* intentional utterances. (And there may, of course, be additional significant "joint" in between.) To begin with, in agreement with the recommended "psychological point of view," EC's starting point is behavior that shows and affects the *psychological states* of producers and receivers, respectively. Moreover, EC draws on current research showing that animals belonging to a wide variety of species can bring their expressive behaviors

(including alarm, food, aggression, courtship, and other calls) under voluntary control – showing a capacity for suppressing, modulating, and even intentionally producing the behavior for instrumental purposes.<sup>16</sup> This suggests that, although expressive behavior is not, in general, a form of *intentionally communicative behavior*, it is wrong to assimilate it to the model of purely reflexive, innately fixed reaction patterns or behavioral routines. It is important to distinguish in this connection between expressive *acts* (or *performances*) and the expressive *vehicles* used. In the case of alarm calls, for instance, what is innately fixed and not learned is the call *repertoire*, which constitutes the set of *expressive vehicles* at the disposal of an animal of a given species.<sup>17</sup> It is far less clear that individual expressive *acts* (or performances) of producing the calls are innately determined in all cases.

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In general, expressive signals such as grooming grunts, food-begging gestures, nursing pokes, and ground-slaps, and various other “intention movements” and “attention getters,”<sup>18</sup> form *unlearned, shared repertoires of expressive vehicles*. As a matter of fact, diachronically speaking, the relatively stable (often innate) character of expressive vehicles contributes to their potential as *bearers of specific informative significance* – they constitute natural analogues of shared (albeit rudimentary) vocabularies. Such repertoires have at least one advantage over intentionally produced gestures that are very context-specific. As noted by Cartmill and Maestriperi (2012), the latter are *too* flexible, and require recipients to figure out what the gesturer is trying to achieve. Insofar as context-specific gestures have no fixed association with a gesturer’s ends, and thus no stable meaning, their efficacy as communicative signals is reduced.

So far, I’ve argued that despite the fact that the production of expressive signals is innocent of Gricean intentions, expressive communication foreshadows linguistic communication in virtue of (at least) the following characteristics:

- (i) Expressive signals carry complex *social meaning*, despite lacking compositional structure, in virtue of showing signalers’ world-directed states of mind (*both affective and cognitive*) and their impending behavior to relevant others, as well as moving them to act appropriately.
- (ii) Expressive signals inherit their complexity from the complexity of the psychological states they express; they are designed to show the intentional objects of these states, as well as their type and degree, and to elicit appropriate responses. Expressive signals are thus “psychologically involved”; despite not being intentionally designed to affect the audience’s states of mind, they reflect and affect producers’ and recipients’ current psychological states.
- (iii) Being naturally, rather than intentionally, designed to suit the social-biological purposes of co-habiting *groups* of animals, expressive signals – as *vehicles* – enjoy stable significance and specific function that prefigure the semantic-pragmatic stability of linguistic signs. In a sense, they embody *shared natural conventions* (see later).
- (iv) Expressive *performances* – unlike mere “informative displays” – can be brought under considerable voluntary control. Unlike the signal repertoires they utilize, the performances are not entirely fixed, and they form intricate patterns of active intersubjective engagements.

Recognizing these features of the production, uptake, and vehicles involved in expressive communication should have consequences for our understanding of the question of the origins of meaning with which we began. When projecting back, we ought to keep in mind that our nonhuman predecessors, being social, minded, and expressive creatures, would have *already* been proficient – though non-Gricean – communicators, with a natural tendency openly to share information about their current states of mind and impending behavior, as well as about their environment, to suitably responsive others.<sup>19</sup> As producers, they would have already had

fixed signal repertoires, readily recognizable by their audience, with which to *show* others how things are with them *and* how things are in the world (as well as moving them to respond in specific ways).

If this is right, then the alleged *Gricean* evolutionary puzzle – to do with the fact that “giving information away would seem *prima facie* to be against the individual interests of the information-giver” (Hurford 2007: 331) – was in a sense already solved with the emergence of expressive communication. This should relieve language evolution theorists of the need to offer specifically evolutionary explanations for why our immediate predecessors should have become motivated to share information with each other about various matters. It would free them to focus on what is perhaps a more tractable (even if still immensely difficult) problem. This is the problem of identifying additional non-Gricean capacities that we have in common with nonhuman animals that – in concert with the capacity to use unlearned but shared expressive communicative vehicles – could have conspired to put our ancestors on their way to the kind of flexible, intentional use of symbolic vehicles characteristic of meaningful speech. Below, I very briefly highlight several such capacities, as these have featured in recent suggestive studies of animal communication.

### From expressive communication to meaningful speech?

In a recent paper, Pika and Bugnayer (2011) report Australian ravens’ “object-oriented behaviours” of showing and offering non-food items of interest “to already attending recipients of the opposite sex”. The relevant behaviors are said to be “always directed to a recipient,” to be “mechanically ineffective,” and to “receive a voluntary response,” as well as show “goal-directedness and sensitivity to the attentional state of recipients.” The authors characterize these as “triadic referential signals,” which (they claim) show similarity to declarative pointing and showing behavior in human children. (They cite the fact that ravens, like humans, rely heavily on cooperation between pair-partners as providing reason to look beyond our “closest phylogenetic relatives,” since “examples of convergent evolution in distant-related species” can “provide crucial clues to the types of problems that particular morphological or behavioural mechanisms were ‘designed’ to solve.”)

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It does not seem quite right to speak of the ravens’ showing and offering behaviors as either triadic or referential. At any rate, it is clear that they are not referential in the same sense in which alarm calls are said to be (functionally) referential. The ravens’ behaviors are *object-oriented* and *object-involving*, but they are not “object specifying”; the ravens show and offer objects, but their behaviors are not semantically *about* those objects. By contrast, an eagle alarm call can function like a holophrastic label – it has the communicative function of alerting relevant receivers to the presence of eagles, or some threat-from-above. It also seems that the ravens’ showing and offering is not *declarative* in the sense in which babies’ pointing to salient attractions is said to be, inasmuch as the ravens’ behavior involves (literally) *bringing* an object to another’s attention, as opposed to *drawing* the other’s attention to a (third) object. But even if the behaviors are not referential, triadic, and declarative, they manifest object-involvement, an interesting type of audience-sensitivity (gauging of the other’s attention), flexibility, and non-imperative use – and, importantly, on the part of a *producer*.

Pika et al. (2005), Leavens et al. (2005), and Cartmill and Byrne (2007) have demonstrated strategic use of communicative signals by both chimps and orangutans. For instance, when partially successful in getting what they want, orangutans repeatedly used gestures that were attempted previously. When unsuccessful, they avoided failed signals and attempted more novel

gestures, trying each only once or twice. In a review of these experiments, Cartmill and Maestripieri (2012) point out that the orangutans had to keep in memory gestures and actions previously attempted so they could redeploy behaviors that had achieved partial success in obtaining the desired food and avoid them when they had failed. They take the study to show that apes have a greater sensitivity to recipients' responses and to the efficacy of their own communicative actions than had been previously thought. Interestingly, Cartmill and Byrne (2007) emphasize the importance of what they call "conventional gestures" – by which they mean species-wide, unlearned, and arbitrary gestures, which contrast with the imitative gestures used in pantomime. They claim that these might be better candidates than iconic gestures as elements of an early "protolanguage," as they place weaker cognitive demands on producers (and presumably on their receivers, too). And they suggest that we should seek insights into the origins of "intentional meaning" in the "grey area" between hardwired reactive behaviors and highly context-specific communicative signals (such as pointing).

A nice illustration of the grey area, as well as of a remarkably fine-tuned audience sensitivity, comes from a recent report by Crockford et al. (2012). They describe recent experiments with wild Ugandan chimpanzees who emit snake calls highly selectively, depending on whether or not the call receivers have themselves seen the snake, whether they have been within earshot of a snake call, how far away they are relative to the caller, and how affiliated they are with the caller. It may be debatable whether the callers "assess the state of knowledge" of the receivers (as the authors claim). But it seems undeniable that the callers are attuned to, monitor, and recall, specifically, other subjects' attention to – and impending behavior toward – a salient ("third") object of potential interest or significance to both producer and receiver, as witnessed by the intricate pattern of their call production. And the call receivers are moved to take specific actions to avoid the threat of which the call informs them, skirting the path to avoid the location of the threat (which is invisible to them).

The wild chimps' case illustrates how, beginning with an unlearned, but shared and stable, naturally meaningful repertoire of *vocal* signals, a producer who is endowed with instrumental or practical understanding,<sup>20</sup> and who has voluntary control over the production of the signals, as well as enhanced intersubjective sensitivity, might be able to bootstrap themselves to using "mechanically ineffective" signals as tools (or means) for accomplishing other-directed ends, exploiting their natural meaning, rather than having creatively to *endow* an otherwise meaningless, novel sound or gesture with a Gricean speaker meaning.

In recent years, several researchers have suggested that the capacity for *imitative vocal learning* (which humans share with birds, and some cetaceans, but *not* with non-human primates) may shed light on the evolution of linguistic communication. This idea is illustrated by one of the more successful instances of training members of a nonprimate species – grey parrots – "to use the elements of English speech to communicate referentially with humans" (Pepperberg 2007: 359). Capitalizing on these birds' keen interest in various items in the lab, Alex (and later Griffin) were taught (among other things) to say "paper," "cork," "corn" – and later "want paper/cork/corn" – to request the relevant items and label them correctly, as well as the template "wanna x/y/z" (e.g. "wanna go back/eat") to make various action requests. The parrot's productions of English word sounds were not instances of rote, purposeless mimicry; they were goal-directed, novel, and referential. So they appear to meet standard current definitions of *imitation*.<sup>21</sup>

Of special interest in the present context are similarities between parrot-human interactions and some familiar paradigms of children's word acquisition. Specifically, consider a familiar acquisition paradigm: the child produces nonlinguistic voluntary expressive behavior and the adult offers a label for the intentional object or other aspects of the child's performance. So, for example, as we witness prelinguistic children's expressive behaviors, we sometimes say things



like: “You’re tired, aren’t you?”, “You want *Teddy*, don’t you?” “You’re so *scared* of this dog,” and so on. What the linguistic adult does in such cases is effect a transition to incipient linguistic behavior by passing onto the child a new *expressive vehicle* for articulating aspects of the psychological state that are shown through the behavior – the state’s character, degree, intentional object, and other features. (This paradigm of “transmission of expressive vehicles,” I submit, underwrites some of the language-learning protocols of not only parrots, but also apes and dolphins, and the acquisition by animals of human gestures such as pointing.) It’s at least in part because Alex was able to *show* his trainers his affective *and* cognitive states – *what* was holding his attention, *where* his focus was, what he was curious about, wanted or needed, whether he was bored, excited, tired, agitated, alarmed, and so on – that the trainers were able to offer him appropriate labels that he could then (thanks to his ability for vocal imitation) appropriate and use in effective communication that deployed speech sounds.<sup>22</sup>

The expressive paradigm of avian learning of labels is suggestive of one possible non-Gricean trajectory. What we’d be looking for is an analogue in phylogeny of the sort of human-to-animal expressive-vehicle-transmission just described. In abstract terms, what we need is something like the following evolutionary progression: at an initial stage, we have a creature producing an expressive, unlearned, functionally referential vocalization; and we have a recipient whose attention is drawn to the referential target of the vocalization. At the next stage, we have the recipient spontaneously imitating the vocalization in resonance with the intentional psychological state expressed by the producer. The recipient has become a (voluntary) producer.

In creatures capable of vocal control and vocal imitation, what begins life as an expressive signal could gradually become detached from producers’ states of mind, while retaining its social meaning and communicative function. What imitation and control enable is the *appropriation* of signals and their use as “mechanically ineffective” communicative means. Voluntary control allows the intentional use of an already naturally meaningful expressive signal as a tool for accomplishing a social goal (as in the wild chimps’ case). Imitation can yield a use of a label to articulate in a distinct form what is only inarticulately shown through expressive behavior (as in Alex’s case.) With the right selection pressures, vocal patterns that are voluntarily producible and reproducible could be detached from their tight connection to expressed psychological states, and used instrumentally to draw attention to objects or other aspects of a shared surrounding. Further detachment from the presence of the normal environmental triggers of the vocalizations could lead to their gaining currency as standard *stand-ins* for the different intentional objects of the states characteristically expressed when producing them. And they can propagate throughout a social group as standard ways of communicating *about* those objects, even in their absence. For example, one can sensibly imagine along these lines that what begins its life as a food call, signaling a producer’s excitement upon seeing food (and moving others to come get it), could become detached from producers’ excitement and attached to their intentional target, so that a voluntary production of the call could take on the force of a *request* for food that isn’t there. Alarm calls for different sources of threat could similarly be attached to alarmed states’ triggers (e.g., leopards vs. eagles) and used even when the trigger isn’t there so as to obtain the desired result of others’ scattering. As the calls begin to be used more the way Alex used labels, they can form, in effect, a rudimentary vocabulary whose elements resemble symbolic one-word sentences with relatively specific content – a so-called “Protolanguage.” (The same may apply to gestures.) Thus, even without the wisdom of Darwin’s “ape-like creature,” who *intends* to use a vocalization “as a sign or symbol for” the relevant source of danger, the ability to use, control, and imitate the production of expressive vehicles could be exploited in overt communicative interactions that exhibit early trappings of intentional use of meaningful, and even conventional, communication.



Limitations of space prevent a fuller survey of cases. Such a survey, I believe, would support the following additional claims:

- (v) Even when using innately fixed repertoires, nonhuman animals exhibit various sorts of flexibility (e.g., audience-effects and context-sensitivity) in *acts* of expressive communication. The *production* of expressive signals (even unlearned ones) can be not only suppressed and modulated, but can even be intentional.
- (vi) Among apes, gestural communication, specifically, exhibits individual and group variability, and can be modified via learning and intersubjective interactions.<sup>23</sup>
- (vii) Expressive communication is at times triadic, relying on shared attention mechanisms that allow signalers and receivers to attend together to objects or events of mutual concern.
- (viii) Through learning to use already meaningful signals as *mechanically ineffective* tools for achieving goals, a measure of symbolic arbitrariness is achieved (through the exploitation of social natural meaning, rather than through convention).<sup>24</sup>

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There are important meaning-relevant differences – psychological, semantic, and pragmatic – between nonhuman animal communication (expressive communication included), on the one hand, and human linguistic communication, on the other. And it is not unreasonable to suggest that, to move beyond mere informative signaling, our ancestors would have had to engage in some form of intentional communication. However, I have tried to make plausible the idea that, *at its inception*, intentional communication need not require the communicator to *intend to communicate some message to her audience* – at least not if by that we mean that she has to have a conception of what her audience thinks, or wants, or intends, etc. *and* intentionally to design her communicative behavior so as to accomplish a desired goal. Expressive behaviors, which (on the account I have sketched) are *naturally designed* for the purpose of intersubjective communication, may be sufficient to put communicators on the right path – the behavioral repertoire itself need not be invented or learned. For once communicators gain voluntary control over the production of expressive signals that are already in their unlearned repertoire – and once, moreover, they are capable of acquiring signals from others through imitation and other kinds of transmission – new forms of communication become possible. Once appropriated, and caught up in intentional actions, expressive signals can propagate and stabilize, and come to have a semantic-pragmatic life of their own.<sup>25</sup>

## Notes

- 1 For fuller discussion, see Bar-On (2013a).
- 2 See Bar-On and Moore, Chapter 27 in this volume.
- 3 The example is due to Bennett (1976: 13).
- 4 For a useful early discussion of the question whether nonhuman animals might meet less demanding, ‘sub-Gricean’ conditions on meaning, see Bennett (1976). And see Bar-On and Moore (Chapter 27 in this volume) for additional discussion and references.
- 5 See, e.g. Bermúdez (2003) and Carruthers (2008).
- 6 Of course, several philosophers have seen a *conceptual* difficulty here (known as the “circularity objection” to Grice’s analysis of meaning), which has prompted a search for accounts of meaning that bypass altogether the appeal to Gricean intentions (see, e.g. Millikan 1984). For relevant discussion, see Blackburn (1984: Ch. 3) and Bar-On (1995) and (2013a).
- 7 This section relies on ideas developed in Bar-On and Green 2010, Bar-On and Priselac (2011), and Bar-On (2013a, b). See also Green (Chapter 29 in this volume) and Stegmann (Chapter 30 in this volume) for related discussions.

- 8 See Tormey (1971).
- 9 See Marler et al. (1992), Macedonia and Evans (1993), and Zuberbühler (2000)
- 10 See also Cheney and Seyfarth (2007: 221).
- 11 On the voluntary control of animal vocalizations, see Fitch 2010: 4.9.3.
- 12 For further discussion, see Bar-On and Priselac (2011) and Bar-On (2013a). And see Gomez (2009) for a related suggestion.
- 13 See references in previous note, as well as Bar-On (2013b).
- 14 See, e.g. Fitch (2010: 4.9).
- 15 It is for this reason that Tomasello maintains that nonhuman primates' gestures are "the best place to look for the evolutionary roots" of human communication (Fitch 2010: 4.9).
- 16 See, e.g. Zuberbühler (2000), Seyfarth and Cheney (2010), Fitch (2010), Hurford (2007), Snowdon (2008), and Fitch and Hauser (2002).
- 17 See Bar-On (2015).
- 18 For a partial catalogue of primate expressive behaviors, see Tomasello (2008: Ch. 2).
- 19 To reiterate, expressive communication only occurs among creatures who engage in overt acts of showing their *states of mind* to suitable others through behavioral performances. Expressive signals, on my view, have meaning that is different from what Green (Chapter 29 in this volume) refers to as the "organic meaning" possessed by biological signals that do not rely on such showing.
- 20 Of the sort that appears manifested in chimps' and corvids' tool use.
- 21 See Fitch (2010: 162).
- 22 Which is not to say that he was using English *words*, or fully engaging in linguistic communication. (See Pepperberg 1999.)
- 23 This contrasts with the signaling behaviors of bees and other eusocial insects, and may support the common-sense intuition that the latter belong in a different biological category, despite their impressive complexity. (Further vindication of this intuition, however, would require an investigation into the natural design of bee dances and the mental life of arthropods more generally.)
- 24 Relevant here is what Tomasello (2008: 5.3.1) describes as "drift to the arbitrary."
- 25 Thanks to several audiences attending presentations of earlier versions of this chapter between the summers of 2012 and 2015 (at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Psychology Colloquium, St. Andrews University, Smith College, Cognitive Science Colloquium, SUNY Buffalo, the Center for the Study of Mind in Nature, University of Oslo, and the Wissenschaftskolleg zu Berlin). Special thanks to Carol Voeller for discussions and comments on earlier drafts.

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