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Mythbusters united? A dialogue over Harris's integrationist linguistics and Gibson's Ecological Psychology

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ABSTRACT

In this paper an integrationist linguist (Peter E Jones) and an Ecological Psychologist (Catherine Read) open a dialogue on the possibility of a productive relationship between the integrationist approach to language and communication of Roy Harris and James Gibson's Ecological Psychology of perceiving/acting/knowing. Within their own disciplinary contexts, each position is one of profound critique and innovation in relation to established and pervasive 'myths'. Specifically, Harris is concerned with the 'language myth'—the explicit positions and implicit assumptions in the Western language tradition (including modern linguistics) about the nature of language and the relationship between language and communication. In sharp contrast to mainstream approaches, Harris rejects both coding and representational views of meaning and takes signs (including linguistic signs) to be the product, rather than the precondition, of communicational activity. Similarly, Gibson critiques assumptions about how perception takes place, especially in the case of vision, that have informed Western science at least since Descartes' *Optics*. In particular, Gibson rejects the passive 'retinal image fallacy' of seeing in favour of an activity based non-representational perspective of 'direct perception'. The paper offers a critical dialogue over the key theoretical perspectives of both traditions, focusing particularly on the import and implications of each theorist's claims and assumptions about the other's field. Highlighting key areas of apparent common ground across the two approaches, we also argue that Gibson appears not to be entirely free of assumptions about language that belong to Harris's 'language myth', while Harris appears at times to assume the 'image' based model of perception that Gibson rejected. In the context of current interest in a possible reconciliation or combination of integrational linguistics and Ecological Psychology, the paper, therefore, raises fundamental questions around the extent to which these independently developed programmes of demythologization are compatible or possibly synergistic.

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'The world does not speak to the observer. Animals and humans communicate with cries, gestures, speech, pictures, writing and television, but we cannot hope to understand perception in terms of these channels; it is quite the other way around.' (Gibson, 1979, p. 242)

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¹ Publications by C. Dent, C. Dent-Read, and C. Read are by the same author.

'Fortunately, we do not need either psychologists or philosophers to tell us when we are dealing with signs and when we are not' (Harris, 1996, p. 175).

'Let us get nearer to the fire, so that we can see what we are saying.' (The Babis of Fernando Po, Ogden & Richards, 1946, p. 1).

1. Introduction¹

1.1. Background and what is at stake

In this paper an integrationist (Jones) and an Ecological Psychologist (Read) enter into a dialogue on the potential compatibility between the Ecological Psychology of James Gibson (1904–1979) and the integrational linguistics and philosophy of communication of Roy Harris (1931–2015), two ground-breaking and dynamic intellectual traditions which were developed completely independently. Within their own disciplinary contexts, each position is one of profound critique and innovation in relation to established and pervasive 'myths'.

Harris's specific target is the 'language myth'—the explicit positions and implicit assumptions in the western language tradition held by academic linguists and lay people alike in western (or 'Northern') culture (Jones and Duncker, 2021). Similarly, Gibson critiques assumptions about how perception takes place, especially in the case of vision, that have been held in western science, at least since Descartes' *Optics*, a position we will refer to as the 'retinal image myth'. Furthermore, both Gibson and Harris problematized, in their own ways, traditional conceptions of perception and communication and each endeavoured to re-think these phenomena and the relationship between them, challenging what they saw as deep-seated misconceptions within academic orthodoxies which had shaped the division of disciplinary labour in the human sciences. Equally, both scholars pioneered ways of understanding and talking about their respective fields of interest which place flesh and blood human beings, their activities and experiences in the world, at the front and centre of their attention. In doing so, they also considered the wider implications of their work for revisiting perennial philosophical problems and for creating new vistas on thinking, learning and knowing.

There is already growing interest in the complementarity or even unification of Ecological Psychology and Harrisian integrationism (see, in particular, Harvey, 2015; Read and Szokolszky, 2020; van den Herik, 2019), although a detailed critical consideration of this growing literature is outside the scope of this paper.² Our primary goal, rather, is to offer an initial view, from both sides of the divide, of the fundamental, and perhaps more difficult questions that need to be clarified before we can decide whether there is a common thread to the radical vector of each scholar's contribution. Thus, while Gibson appears not to be free of assumptions about language that are part of the 'language myth', Harris at times endorses a 'retinal image' based model of perception. In that light, the dialogue undertaken here seeks to clarify the depth and scope of this divergence prior to any attempt to reconcile the two positions.

The paper begins with a general discussion of the basic issues at stake in the dialogue over Harris and Gibson, followed by separate expositions of the two theorists' key contributions in their own field, though with an eye to their approach to the other's. The co-authors then provide short critical commentaries on each other's expositions and, finally, summarise the main points of the discussion. We hope that this critical exploration will prove useful not only to researchers who are working to extend or build on the work of Gibson and Harris but also to those who are seeking a theoretical convergence or reconciliation of the two.³

2. Common ground between Gibson and Harris

2.1. Fundamental orientation

Current interest in the relationship between integrationism and Ecological Psychology (as well as the more extensive field of 'E-approaches to cognition' ('embodied, embedded, extended, enacted, and ecological') (van den Herik, 2019, p. 3) is motivated by what appears to be substantial common ground in the theoretical motivations and inclinations of the two approaches. Both Gibson and Harris embraced everyday experience as the starting point and ultimate arbiter of theoretical principle in the face of powerful contemporary currents of philosophical scepticism, relativism or anti-realism. More particularly, both scholars appealed to creative human activity in the real world in fashioning their key theoretical innovations, thereby joining the broad currents of work in the human sciences seeking to ground theory on activity and transformative action rather than reactivity, responsiveness or mere adaptation to circumstances (cf. Stetsenko, 2017). As Read and Szokolszky (2020) put it:

¹ We would like to thank Charlotte Conrad, Nigel Love, and Mark Stott for very valuable conversations about the topics and arguments in this paper. We would also like to thank our Editor and the two reviewers for their helpful and constructive comments and criticisms which we've tried to take on board.

² We will also set aside any discussion of alternative approaches to perception in which Gibson is claimed as a key influence, e.g. Noë (2005).

³ We should also acknowledge the growing interest in the value of the semiotic perspective of C S Peirce for studies of embodied cognition, perception-in-action, and interactivity (e.g., Korbak et al., 2021). However, we will make no attempt here to compare or contrast the work of Harris and Peirce. For Harris's own views on Peirce, including Peirce's celebrated typology of signs, see Harris (1996).

'The Ecological knower is an adaptive actor and explorer in the course of its life. For Gibson, perception is not a process of passive reception of information that is built up into a representation of a meaningful environment, but direct sensitivity—often made possible by exploratory activity—to an environment that is action-relevant. In brief, there are no intermediaries between the knower and the known, and what is known is at the ecological scale of the behaving organism'.

In this, Gibson was directly influenced by the Soviet psychological current of activity theory (Stetsenko, 2017). For his part, Harris looked to somewhat different philosophical touchstones, including existentialism and humanism (Pablé, 2017) while critically building on the more anthropologically-informed contextualism of the British linguistic tradition (Harris, 1997) as well as the approach to language and activity in the later Wittgenstein (Harris, 1988). On these foundations Harris created a quite unique semiological perspective on communication in which the activities of real people in context are taken to be the site—and the fundamental experiential matrix—of sign-making:

'Signs, for the integrationist, provide an interface between different human activities, sometimes between a variety of activities simultaneously. They play a constant and essential role in integrating human behaviour of all kinds... Signs are not given in advance, but are made. The capacity for making signs, as and when required, is a natural human ability (Harris, 2000, p. 69).

More specifically, and more importantly, Gibson and Harris were at one in their attacks on traditional views of perception for the misconceived communicational models or analogies which informed them. Both scholars rejected views of perception as communication in the sense of a process of interpretation (deciphering or decoding) of signs or signals supposedly conveyed from the natural world to our senses (or to our brains via the sense organs). However, as we shall see, the two theorists came to this common standpoint from different directions and drew quite different conclusions therefrom. Gibson (1979) in fact broadly accepted a general conception of communication, in line with mainstream transmission or transference models, as a process of sending and receiving (encoding and decoding) signs or signals but refused the application of such a conception to perception. For Gibson, in other words, perception was not communication at all in the sense described, though his new concept of 'direct perception' very much had to do with meaning and value in the lifeworld relevant to the activity of the perceiving organism. By the same token, Gibson allowed the validity of such a transmission model for the diverse 'artificial' systems of communicational engagement (including spoken and written language, visual art etc.,), thereby setting up a dichotomy of perception and communication which is considered problematic, especially as the transmission model itself is widely regarded as unsatisfactory. As he explained in his criticism of the communicational model of Shannon and Weaver (Gibson, 1979, p. 242):

'picking up information is not to be thought of as a case of communicating. The world does not speak to the observer. Animals and humans communicate with cries, gestures, speech, pictures, writing, and television, but we cannot hope to understand perception in terms of these channels; it is quite the other way around. Words and pictures convey information, carry it, or transmit it, but the information in the sea of energy around each of us, luminous or mechanical or chemical energy, is not conveyed it is simply there. The assumption that information can be transmitted and the assumption that it can be stored are appropriate for the theory of communication, not for the theory of perception'.

Harris, on the other hand, began by throwing out the transmission model of communication entirely, i.e., as applied to *all* signs, beginning with linguistic signs (spoken and written, etc.) but embracing the whole field of 'artificial' communicational systems and technologies. Naturally, therefore, Harris also rejected the relevance of a communicational perspective of *that kind* to the phenomena of perception. However, Harris's own principal innovation—a non transmissional or *integrational* approach to communication as *sign-making*—directly encroaches on the territory of meaningful or direct perception in Gibson's sense. In other words, Harris's counter to Gibson is the proposition that perception (or perceptual activity) can yet be considered a communicational (semiological) process *provided you adopt a different view of communication*, a view that Gibson could not have been aware of. From Harris's radically new semiological perspective, then, a number of things follow. First of all, the lines or boundaries Gibson draws between perception (non-communication) and language (communication) must be re-drawn. And, secondly, Gibson's own theory of direct perception must involve or presuppose, in Harris's terms, a communicational (semiological) perspective of some kind, albeit disguised, and one that is consequently open to (and therefore perhaps vulnerable to) integrationist critique. It is certainly the case, for instance, that Harris would have homed in on the explicit metalanguage Gibson uses to define direct perception, notwithstanding his own explicit reservations about the terminology, as 'information pick up'. It is interesting to speculate, therefore, about what might have happened in the development of Ecological Psychology had Gibson known of Harris's integrational linguistics.

Equally important is the question of how Gibson would have evaluated Harris's own statements on perception and on the distinction between perception and communication (and between perception and knowledge, Harris, 2009b). As we shall see, Harris casually and uncritically reproduces many of the key tenets, and invokes the characteristic terminology, of the classic 'retinal image' model that Gibson's own critique focussed on. And this despite Harris's lucid and undoubtedly insightful account of the problems and misconceptions besetting the history of theories of perception and communication and their inter-relationship (Harris, 2002). Had Harris been aware of Gibson's work, would he have re-considered his position and, if so, how might integrationist principles have thereby been affected or influenced?

2.2. The prospects for theoretical reconciliation

What is it that makes Harris's integrationism attractive to the contemporary Ecological Psychologist? Firstly, one should take account of the generally recognised, and to some extent self-imposed, limitations of Gibson's own ideas on language and communication. Indeed, perhaps his single most important work, [Gibson \(1979\)](#), substantially avoids any analysis of linguistic interaction and other forms of interpersonal communicational activity. It does, however, deal in some detail with types of visual communication, including drawing, photography and film, where Gibson's acceptance of traditional assumptions about communication is clearly in evidence. This lacuna has encouraged, if not demanded, an extension of Gibsonian principles into linguistic communication and other central domains of social activity and interaction. In that context it is understandable that Ecological Psychologists, as well as adherents of 'E-approaches' more generally, have sought out those theories of communication which might afford a hospitable theoretical basis for suitably extending and amplifying the scope of Ecological Psychology and have often looked to Harris in particular as a promising intellectual partner. The appeal of integrationist semiology from this point of view is many sided, though its activity-grounded semiology and anti-representationalism are undoubtedly key factors. Furthermore, in a number of key texts, notably [Harris \(1996, 2009b, c\)](#), Harris attempts to ground his semiological notion of integration in principles of action and perception, a line of thinking developed most carefully and insightfully by [Charlotte Conrad \(2020\)](#), though with William James as psychologist partner, a scholar who, in contrast with Gibson, considered perception as concept-driven.⁴

From the Harrisian side, Gibson's appeal, not to mention the attraction of a Gibson–Harris meld, is perhaps less obvious, though we will argue that there are grounds for integrationists to give Ecological Psychology a closer look at least. Harris himself tended to be disdainful of academic psychology altogether (see for example [Harris, 2008, 2009b](#)) though he was apparently unaware of the work of either James Gibson or Eleanor Gibson with Richard Gregory as his most cited contemporary source of information or foil depending on the argument Harris was pursuing (e.g., [Harris, 2008](#), p. 116).⁵ Theories and models of perception in particular are regular targets for Harris's often caustic critical commentaries which often appeal over the heads of academic 'experts' to the experiences and understandings of the lay person. Throughout, Harris's main concern was to bring into focus the historical, as well as contemporary, use of untenable communicational models and analogies in theories of perception. Indeed, one of Harris's most important, if perhaps less acknowledged, contributions as a semiologist was in identifying and exploring the intimate inter-dependence of conceptions of perception and models of communication ([Harris, 2002](#)), a vital concern in Gibson's own work too, and in demonstrating the ways in which innovations in communicational technology had influenced thinking about perception.

Specifically, Harris demonstrates how any attempt to consider the relationship between (or identity of) perception and communication must situate itself in relation to thousands of years of scholarship and argument in the course of which some solutions to the problem have proved more influential and more enduring than others. One might think, for example, that a theory of perception might take priority over, and in turn provide a foundation for, a theory of language or communication on the apparently logical assumption that signs of any kind, in order to be used and apprehended, must first be perceived (and therefore *perceptible*). But in point of fact, Harris shows that the history of western scholarship appears to show priorities reversed:

'So it might seem on first inspection that before there is any question of a language myth, or any account of words, there is already in place a no less mythical account of sense perception. But that is too simplistic. From Aristotle down to Locke and beyond, accounts of sense perception and accounts of language go side by side, each supporting the other. Some accounts are simpler and some are more complicated, but their interrelationship remains constant. It has been recycled time and again over the centuries. It appears in different versions, but without ever departing radically from its archetype. That is, typically, the mode of existence of a cultural fossil' ([Harris, 2002](#), p. 13).

The 'cultural fossil' which Harris identifies and focusses on is what he refers to as the 'pattern transference model', a perspective modelled on natural processes (e.g. the impress of a ring on wax) and applied at various times and in various ways to both perception and language. The 'classic example' of such a perspective, in Harris's view, 'is Aristotle's pattern transference model of sense perception (although he did not call it that)': 'He held that the mind acquires copies of likenesses (*homoiomata*) of things in the external world (*De Interpretatione*, 16a)' ([Harris, 2002](#), p. 11). He goes on:

'There isn't room in my head for a full-scale replica of Mount Olympus. But this is just where a pattern transference model comes into its own: the visual pattern presented by Mount Olympus gets inside my head on a much reduced scale' ([Harris, 2002](#), p. 12).

Harris shows how linguistic communication, too, has been seen according to this model as 'the transmission of a message' via 'a non-reversible process in time'. He explains:

⁴ Conrad draws on James and American pragmatism more broadly in her presentation of 'an integrational account of semiosis that does not presuppose signs, but explains them as emergent within human perceptual activity' (2020, p. 13).

⁵ Harris also makes occasional references to the work of Raymond Tallis (e.g., [Harris, 2012](#), p.114).

'this process is conceived of as linking at least two matching items. Starting from the thought that "Gold is valuable" in A's head, we proceed via the utterance of the sentence to a matching thought in B's head. As a result of the one-way transmission, we get a second pattern that, although spatio-temporally discrete, copies the original ... The original pattern has somehow been transferred to or recreated in a new location' (Harris, 2002, p. 7).

However, Harris also argues that at times there were alternative theoretical conceptions available and, consequently, other paths that western scholarship might have taken:

'Aristotle's theory of sense perception was not without competitors. Plato puts forward in the Theaetetus a quite different account. According to this, the sensible qualities perceived – for example, the whiteness of snow – reside neither in the original object nor in the perceiving sense-organ. Whiteness somehow arises as the joint product of an interaction between eye and object. In other words, it is not a case of pattern transference at all. The reason I mention this is to point out that if Plato's theory had triumphed, that interactional model would not have done at all for purposes of explaining telementation. A chasm would then have opened up between the favourite Western explanation of sense perception, on the one hand, and the favourite Western explanation of verbal communication on the other. But with transference models these two things go together. They are both examples of basically the same kind of process' (Harris, 2002, p. 12).

We will bear this analysis and commentary in mind as we examine in more detail the possible 'chasm' between the respective positions on communication and perception of our two main protagonists and consider whether such a chasm may be bridgeable.

3. Gibson's new approach to perception: the example of ecological optics

3.1. Ecological optics

James Gibson pioneered an approach to perception, a theory of perception, which assumed that perception of the real world was possible, and he spent his career analyzing and testing this idea. He wrote in 1974 that ecological optics is 'the basis for a new theory of vision and is itself based on a new conception of the environment to be perceived' (Gibson, 1974, p. 309). The final publication by Gibson, *An Ecological Approach to Visual Perception* (1979), laid out the theory in relation to vision, but was careful to point out that the ecological theory of perception was general and could be elaborated in relation to audition, haptic perception, and so forth. In elaborating the ecological approach and theory, Gibson was required to contrast his new ideas to old ideas about perception which claimed that direct and accurate perception of the world was not possible, that perception consisted only of sensations, and that the sensations had to be enhanced with some kind of mental processing (see, e.g., Read and Szokolszky, 2020). In relation to vision specifically, the idea that had to be countered was that vision can only result when a retinal image is analyzed, adumbrated, stored, and processed mentally. Though Gibson did not use the word 'myth' for these ideas; he called them a 'puzzle' (1968, unpublished) or a 'fallacy' (1979, p. 62), we will refer to this set of assumptions as the 'retinal image myth' for convenience and in parallel with Harris's 'language myth'.

3.2. Ecological optics versus the retinal image: demythologizing perception

What is perceiving if it is not making inferences based on the reduced 'information' or input or signs provided by the senses, as in the prototype of the retinal image? Ecological optics begins from a new starting point: not from images projected onto the retina which form sensations, but on active detection of structure in ambient light. Traditional theories assume either that the inputs of the sensory nerves are corrected by the brain, or that the corresponding sense impressions are interpreted by the mind. In contrast, ecological perception assumes that the inputs of sensory nerves are incidental to the process of perception which takes place by the action of perceptual systems that function as the whole organism acts in its surround: 'These are systems which adjust the sense organs instead of just receiving stimuli; systems that explore the light and sound and pressure of the environment for the information contained. This is information about the sources of stimulus energy, not merely signals' (Gibson and Gibson, 1972, p. 2). Later, Gibson elaborated on the history of the idea of a retinal image as the basis of vision.

'Ever since someone peeled off the back of the excised eye of a slaughtered ox and, holding it up in front of a scene, observed a tiny, colored, inverted image of the scene on the transparent retina, we have been tempted to draw a false conclusion. We think of the *image as something to be seen*, a picture on a screen. You can see it if you take out the ox's eye, so why shouldn't the ox see it? The fallacy ought to be evident.

The question of how we can see the world as upright when the retinal image is inverted arises because of this false conclusion. All the experiments on this famous question have come to nothing. The retinal image is not anything that can be seen' (Gibson, 1979, p. 62). Additional contradictions inherent in the retinal image doctrine have been pointed out (Carello and Turvey, 2020) including that light itself is not visible, and living retinas do not reflect images.⁶

Gibson worked out ecological optics as an approach to perception that focuses on the level of the whole *animate* organism in its natural surround, and the structured arrays (in light, sound, pressure) that are consequences of the surround. These arrays are what perceptual systems are sensitive to, which allow the organism to detect, coordinate with, and change its surround as the organism goes through its life over time. Gibson, in the case of vision, describes light-filled spaces, that is, ambient arrays, structured by the surfaces, layouts, objects, and events in the organism's surround, including other organisms (Fig. 1).

'The information for perception is not transmitted, does not consist of signals, and does not entail a sender and a receiver. The environment does not communicate with the observers who inhabit it. Why should the world speak to us? ... The world is *specified* in the structure of the light that reaches us, but it is entirely up to us to perceive it. The secrets of nature are not to be understood by the breaking of its code....We cannot explain perception in terms of communication; it is quite the other way around. We cannot convey information about the world to others unless we have perceived the world. And the available information for our perception is radically different from the information we convey' (Gibson, 1979, p. 63).

'Animals and people do in fact see the environment during locomotion, not just in the pauses between movements. They probably see better when moving than when stationary. The arrested image is only necessary for a photographic camera. An observer who is getting around in the course of daily life sees from what I will call a *path* of observation. A path does not have to be treated as an infinite set of adjacent points at an infinite set of successive instants; it can be thought of as a unitary movement, an excursion, a trip, or a voyage. A path of observation is the normal case, short paths for short periods of observation and long paths for hours, days, and years of observation. The medium can be thought of as composed not so much of points as of paths.

It sounds very strange to say that one can perceive an object or a whole habitat at no fixed point of observation, for it contradicts the picture theory of perception and the retinal image doctrine on which it is based. But it has to be true *if it is acknowledged that one can perceive the environment during locomotion*. The perception of the environment is understood to accompany the visual proprioception of the locomotion itself, of course, and the hypothesis of invariant structure underlying the changing perspective structure is required for this to be intelligible. These are unfamiliar notions. But the notion of ambulatory vision is not more difficult, surely, than the notion of successive snapshots of the flowing optic array taken by the eye and shown in the dark projection room of the skull' (Gibson, 1979, p. 197).

All perceiving involves acting/all acting involves perceiving; perceiving/acting takes place in and by means of arrays structured by the surround through a process of resonance, resulting in the direct perception by the organism of its environment over time (see Fig. 2). A key innovation of Gibson's was the idea of affordances, or what the environment affords the organism, for good or ill (1979, Chapter 8). This idea has been adopted with varying degrees of consistency by many researchers at this point (e.g., Heras-Escribano, 2021; Wagman & Blau, 2020; Brancazio, 2020; Chong and Proctor, 2020).

Ecological Psychology theory has not yet been developed to the point of a generally shared definition of affordances. Are affordances support for a range of actions from the physical, to culturally preferred actions, to social and communicative actions that are specifically human (Loveland, 1991); dispositions of aspects of the environment surrounding an organism (e.g., Turvey, 1992); the invitation or demand character of things (cf. Kiverstein and Rietveld, 2014, possibly related to the Gestalt idea of *Afforderungscharakter* from Koffka, 1935); or the idea that surfaces can further an accomplishing that has been underway, is currently underway, or may yet be underway (Webster, 2020: 5)? We would like to make two points to contribute to this debate. First that the idea of affordance is based on the assumption of the mutuality of animate organism and its surround, and second, that affordances can profitably be conceived of as a *flow*.

⁶ The second author during an examination by her optometrist was shown digital images of what the optometrist had seen looking through her pupil, which, of course, showed an illuminated surface with lines (the shadows cast by blood vessels). When the author asked the optometrist: "So the idea of a retinal image is just a hypothesis; no one has ever seen one?" The doctor replied: "Yes, of course." She didn't seem to assume that either she or anyone else ever saw a retinal image, at least in the context of her physical examinations and measurements.

Figure 7.2

A sequence of overlapping fields of view obtained by turning the head to the right. This is the same room and the same man as in Figure 7.1, except that his feet are now lined up with the window instead of with the corner of the room. The head turns through an angle of about 90°. His nose is always at the right-hand edge of the field. The field of view is a *sliding sample* of the ambient array.

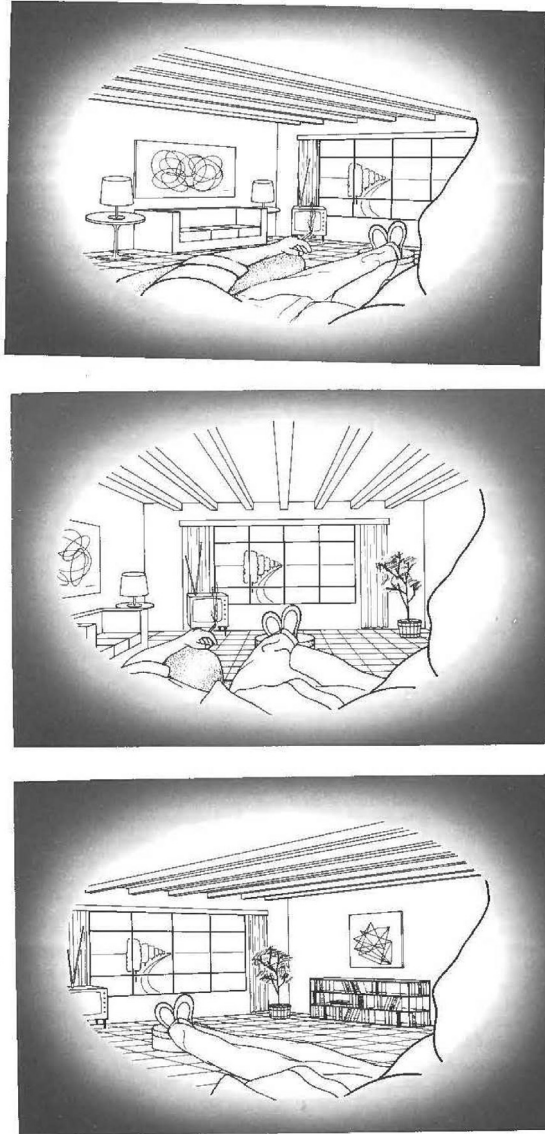


Fig. 1. Overlapping views, turning the head from left to right.

First, regarding mutuality, in 1977 at a conference on Cognition and the Symbolic Processes, J. J. Gibson took part in a discussion in which he talked about affordances (Weimer and Palermo, 1982, p. 234). Several of the points he made there are still crucial for understanding mutuality and affordances. Gibson said the animate organism and the environment are mutual with each other, they do not 'interact' because interaction implies two separate entities. In searching for a description of mutuality he said 'reciprocity' was not too bad, but that we need ideas that point both ways, that is, to the subject and the object at the same

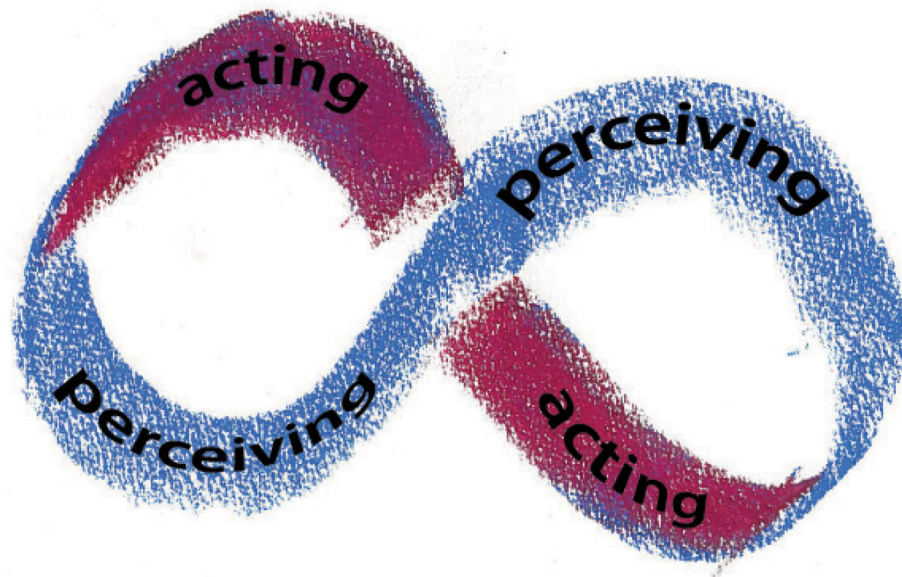


Fig. 2. Coordination of perceiving and acting; perceiving/acting.

time.⁷ He gave two examples of such concepts: *affordance* and *ambient optic array*. (Note that the ambient optic array flows as the perceiver and/or objects in the environment move.) Gibson then said: 'So with such concepts, I don't have to ask a question about the relation between an animal and its environment, I've defined it out of existence ...' (1982, p. 234).

Second, regarding affordances, Gibson went on to say that affordances are both objective and persisting, and, at the same time, subjective because they relate to the species or individual for whom something is afforded. We perceive affordances over time. Building on these statements and the debate on affordances that has taken place since then, we would like to propose that an analogy may be helpful in thinking about affordances, mutuality, and perception/action over time. A river is not the flowing water, nor the bed the water flows in—instead it is something that these two mutual elements bring about that goes beyond either one of them. Although this example is from the mineral or nonliving world, we can draw an analogy to the situation of an animate organism and its surround. The animate organism and its surround bring each other about, and they bring about a *flow of affordances*. This flow of affordances points both to agentive actor and to the effective surround; just as the ambient optic array flows when a perceiver with eyes moves, affordances flow when an agent acts. Affordances flow over time. Affordances are perceived in the same way any aspect of the surrounding surfaces is perceived based on ecological optics (e.g., the flow of texture gradients, occlusions and disocclusions) and ambient arrays in other modalities. Although affordance has become a popular topic in both enactivist and ecological research, no one has yet elaborated the idea in the context of the flow of perceptual experience that results from the flow of ambient arrays. If one relates affordances to the other bidirectional term, that is, the ambient array, then it becomes clear that what the environment affords is ongoing and constantly changing depending on both the organism's actions and activities and on a changing surround. Perceiving/acting is always becoming more and more expanded and complete.

The ecological approach has grown from a theory of perception toward an encompassing theory of an ecology of agency (Costall, 2004). Applying this framework defines what to look for in studying any psychological phenomena: what opportunities the environment offers to act and how the organism is willing and equipped to make use of these opportunities. Not mental representations, or interpretations, or judgments, but action and perception are the primary driving forces and explanatory principles.

⁷ Some researchers have begun to relate Gibson's ideas of mutuality and of perceiving as resonating to earlier ideas of the 'Umwelt' (Fultot and Turvey, 2019; Feiten, 2020). As Feiten (2020) points out, by 'Umwelt' Uexküll meant subjective experience, which is not the same as direct perception, which, on Gibson's view, is neither subjective nor objective but an aspect of organism-environment mutuality. That is, perceiving is a type of activity on the part of the animate organism in its surround. According to Ecological Psychology, subjective experience does not constitute the world we perceive (that would be a constructivist claim) and, inasmuch as the Umwelt is defined as subjective experience, it is not relevant to direct perception (Feiten, 2020). The idea that perceiving is a process of resonance to structure has led some to propose that Uexküll's concept of harmony between organism and world might be relevant to perceiving (Fultot and Turvey, 2019), and not just as a guiding analogy. But if resonance is literal, it does not have to do with the Uexküll 'Umwelt' (note that Uexküll assumed perception to take place as a process of 'sensory cues' that guide behaviors which then create the meaningful environment, this is why he is also considered a founder of semiotics, cf. Amrine, 2015). Gibson has provided a new 'third way' between mechanism and vitalism in psychology that no one had worked out in the past, and that is mutuality and direct perception. It is possible that direct perception is compatible with Goethean science methods and that such methods can advance Ecological Psychology, but that is yet to be determined (cf. Read and Szokolszky, 2018).

3.3. Gibson on language and verbal communication

Given the above summary of ecological optics, and perception in general, we have the basis for a theory of direct perception, and a refutation of the 'myth' of the retinal image. But what did Gibson have to say about language and communication? Did his radical reworking of assumptions and theory about perception extend to an understanding of language and communication? We will see that he made some of the traditional assumptions on these latter topics, and, therefore, described them according to the 'language myth' that Harris was at pains to dispel. To the extent that Gibson's characterization of language conforms to the language myth, his theory and description of the relation of direct perception to verbal communication is unnecessarily limited and reduced.

We will briefly outline Gibson's statements on language and communication, especially on writing and reading, from his 1966 book, *The Senses Considered as Perceptual Systems*. We then summarize research done on the development of letter and word discrimination from an ecological point of view. Next, we cover Gibson's much briefer statements on language in his 1979 book, *The Ecological Approach to Visual perception*. Several researchers took up his approach to perception in endeavoring to study language and language development (e.g., Dent-Read and Zukow-Goldring, 1997; Zukow-Goldring, 1997, 2012), or from within the ecological approach endeavored to extend research topics to include speech and language (e.g., Fowler et al., 1980; Fowler and Hodges, 2011). A review of this literature is beyond the scope of the present paper, but an examination of this research in terms of the assumptions made about language and communication would prove fruitful for furthering consistent theory that relates perceiving/acting/communicating.

Gibson's main concern with language in the 1966 book is whether it has effects on perception (Gibson, 1966, pp. 280–282). He argues that the idea that language distorts or stereotypes perception is based on one fact about language, namely, 'the fact that it is a code' (1966, p. 281, emphasis in the original). However, Gibson rejects the idea that the code in question is a set of associations between verbal sounds and percepts of things in the world, and substitutes for this idea the claim that words 'embody stimulus information, especially invariant information about the regularities of the environment. They consolidate the growing ability of the child to detect and abstract the invariants' (1966, p. 281). He goes on to say that language is more than a code, because it permits predications as well as labelings, that is, it has a grammar as well as a lexicon:

'So the child's discovery of facts about the world can be predicated in sentences, not simply stereotyped in words. ... He gets information first by focusing, enhancing, detecting, and extracting it from nonverbal stimulation. Later, the extracting and consolidating go on together. Perceiving helps talking, and talking fixes the gains of perceiving. It is true that the adult who talks to a child can educate his attention to certain differences instead of others. ... The range of possible discriminations is unlimited. Selection is inevitable. But this does not imply that the verbal fixing of information distorts the perception of the world' (1966, pp. 281–282).

'Above all, the puzzle of meaning and value in perception takes an entirely new form. If what things afford is specified in the light, sound, and odor around them, and does not consist of the subjective memories of what they have afforded in the past, then the learning of new meanings is an education of attention rather than an accrual of associations' (1966, pp. 320–321).

Gibson elaborated, in relation to written language, what he called the 'fundamental graphic act', that is, the inscribing of lines with whatever tool in whatever medium, and the relation of this act to the alphabet and reading and writing. He assumes that 'the sounds of speech (can) specify objects by their names, and a great deal more (propositions, comments, questions)' (1966, p. 242). But sound and gesture are impermanent, so writing was developed and Gibson describes writing thus: 'the connection between grapheme and phoneme and thence to the referent is conventional and arbitrary' (ibid.). One has to discriminate the graphemes and learn to read. As we have seen, Gibson referred to the invariants in the optic array produced by the movements/actions of an animate organism as 'information'. He distinguishes different orders or levels of information and this idea is directly related to his ideas about language. For example:

'The invariants in the light from a human face specify the man (sic). The invariants in the light from a picture of the face can specify the man. The invariants in the sound of his name specify the man, and thus the invariants of the letters that spell his name specify him. And finally, the long string of printed letters that can say "this man is wanted for murder" specifies the man in the whole context of his group.' (1966, p. 244).

Gibson concludes: 'The problem of the communication of information from one person to another also takes a new form. Pictures and words are now seen to be truly mediators of perception, of perception at second hand. Spoken and written words presuppose a code, and associative learning of the classical sort does come into the child's mastery of this code. But association is not the basis of learning as we have been taught. Discrimination has to precede association for language to be of any use. The ability to name and to predicate fixes the gains of perceiving but it does not explain perceiving. It fosters the education of attention to the facts of the world but cannot substitute for it' (1966, pp. 320–321).

The language myth aspects of these ideas will be discussed below.

3.4. Further work by J.J. Gibson on language and communication

In [Gibson \(1979\)](#), language *per se* is not an explicit topic, but representation is. Here he is dealing with images (drawings, photographs) that capture ‘some of the contrasts or relations in the light’, but not the experience of brightness and color ([1979](#), p. 280). Perceiving a picture is somehow more like perceiving an object, place or person than is a verbal description. With language, information—in the direct perception sense—is implicit; awareness of being in an environment at a certain place cannot be described (‘forced into predications and propositions’, [1979](#), p. 285). Here we see Gibson assuming that language consists of predications and propositions, and communication consists of the use of these assumed qualities of language.

3.5. Subsequent ecological work on language and communication

Language research related to the ecological approach to perception originated in two ways: ecological perception researchers extended their topics into the areas of speech/language (e.g., [Fowler et al., 1980](#); [E. Gibson and Levin, 1975](#); [Zukow-Goldring, 2012](#); [Gogate et al., 2001](#); [Golonka, 2015](#); [Rączaszek-Leonardi, Fusaroli and Caramelli, 2016](#)) or language researchers endeavored to draw on ecological perception as a part of their theory and rationale (e.g., [Dent, 1990](#); [Dent-Read and Zukow-Goldring, 1997](#); [Rader and Zukow-Goldring, 2012](#); [Harvey, 2015](#); [van den Herik, 2019](#); [Rączaszek-Leonardi, 2010](#); [Rączaszek-Leonardi, Nomikou, Rohlfing and Deacon, 2018](#)). A review of this work is beyond the scope of the present paper, but a few points are worth noting. Gibson argued repeatedly and cogently that perceiving is not a process of registering stimuli, representing and then interpreting the original ‘stimulus’. Perceiving/acting does not take place by means of any kind of representation, but, rather, is a process of resonating to structured energy arrays that change over time with the animate organism’s movement and as a result of events in the surround. Language studies have a long history of assuming that the phenomena of language and communication are the *sine qua non* of representation: language must involve something standing for or standing in for something else. Therefore, language studies that reject this assumption are radical, as is a theory of perceiving that rejects the stimulus as the basis of perception. Distributed language approaches (e.g., [Harvey, 2015](#)) reject representationalism and, instead, develop an account of ‘*linguaging*’ as an activity that is described as consistent with other antirepresentational accounts, including Ecological Psychology. This account is consistent with ecological approaches to the extent that it is consistent with direct perception. Some enactivist accounts of language (e.g., [van den Herik, 2019](#)) also draw on ecological ideas, specifically of attention as intentional perceiving/acting, and of affordances. Again, the question of consistency with Ecological psychological approaches to language and knowing is still being debated (cf. [Heras-Escribano, 2021](#), specifically [Read and Szokolszky, 2020](#)). To date no one has directly related integrationist work on language and communication with the direct perceiving/acting of the ecological approach to perception.

4. Harris on the language myth

4.1. The philosophical basis of integrationism

Roy Harris developed the integrationist philosophy of communication as a historically grounded critique of contemporary linguistic theory, penetrating through to the distinctively Eurocentric assumptions about communication which underlie the fragmented landscape of academic specialisms peculiar to ‘Northern Theory’ ([Connell 2007](#); [Makoni et al., 2021](#); [Jones and Duncker, 2021](#)), while also highlighting the pervasive consequences for social life more generally of what he referred to as ‘the language myth’ ([Harris, 1981](#)). The ‘language myth’ in question embodies a particular linguistic ontology in the shape of a commitment to the existence of separate and denumerable ‘languages’ (or ‘language systems’), each language ‘regarded as an elaborate verbal code, comprising known pairings of linguistic forms and their meanings, together with their combination according to fixed rules of grammar’ (2009b, p. 12). Harris reserves the term ‘segregationism’ for the view that languages are coded systems of this kind which can be studied and systematized independently of the lives of those who create and use them.

Two mutually reinforcing ideas are key to this conception ([Love, 1990](#)): firstly, that linguistic communication is a process of mental transmission (‘*telementation*’), that is, the transfer of a determinate set of ideas (meanings, concepts) from one mind to another; and, secondly, that this transference is mediated by a pre-established encoding of said content in physically transmissible forms, whether spoken, written or signed ‘words’ (or other units, e.g., the ‘morpheme’) which serve as the *perceivable* containers or vehicles of such content. The assumption that linguistic signs, or at least their external vehicles (‘forms’), can be *perceived* is therefore central to segregationist linguistic theory and analysis.

Integrationism, by contrast, takes off from the rejection of the segregationist position *in toto*, i.e. ‘both the notion of tele-mentation between speaker and hearer, and at the same time the interpretation of public languages as codes known to all speakers and hearers in a given linguistic community’ ([Harris, 2009b](#), p. 73). Integrationism consequently refuses the methodological premises and technical metalanguage of any type of segregationist linguistic analysis and is not, therefore, an apparatus, framework or methodology of description, transcription or analysis of ‘languages’, ‘utterances’, ‘grammar’, ‘discourse’ or of any such supposed linguistic entities. Rather, all such systems and their constituent elements are taken to be ‘second order’ constructs, that is, the product of particular ‘language games’—analytic procedures and their intellectual

agendas—being played with the reified traces or outcomes of the live ('first order') exercise of communicational powers by particular people in specific contexts (Love, 1990)⁸.

The 'philosophical basis' of integrationism is therefore the position that 'the linguistic universe is populated not by mysteriously unobservable objects called "languages" but by observable human beings who somehow and sometimes manage to communicate with one another' (Harris, 1998, p. 19). Communicational activities 'are episodes in the lives of particular people at particular times and places' and 'cannot be decontextualized' (2009c, p. 70). 'Managing to communicate', on this view, is a matter of our active exercise of creative and open-ended communicational powers or proficiencies which we develop throughout our lives and which enable the contextual integration of activities, powers which are not accountable or statable in terms of 'units' of any kind or as idiosyncratic à la carte repertoires of units taken from an available pool.

On that basis integrationism takes the ('second order') constructs and theoretical assumptions of different schools of linguistics themselves as its primary subject matter for analysis and exegesis. In exposing the ethnocentric biases and limitations of such positions, integrationism thereby encourages critical enquiry into all of human communicational experience, whose horizons are unfixable, and embraces everything which may be involved in and relevant to the exercise and development of such powers, including our beliefs about such experiences and the role such communicational beliefs play in direct communicational encounters as well as in broader cultural and political fields.

This rejection of segregational linguistic methodology has far reaching implications for linguistic and communicational theory and philosophy which can only be hinted at here (see, for example, Makoni et al., 2021). One issue concerns the intimate connection between linguistic analysis and views of human reason and cognition. As Harris (2009a) shows, Western (Eurocentric) conceptions of rationality are segregationally logocentric, firmly rooted in particular types of literacy practice and literate awareness and reflecting the assumptions of literate culture more widely. Such language-based conceptions of reason impede our appreciation of the integration of linguistic activity into individual and social activity, including intellectual activity, thereby promoting a profound and unresolved dualism of thought and action within our dominant philosophical traditions. Furthermore, segregationist methodology is at root a taxonomic or classificatory endeavour: elements are exemplars or 'concrete' instances of general, 'abstract' categories or types (see Hutton, 1990; Jones, 2017b) such as phonemes, morphemes, words, syntactic constructions etc. More specifically, this logocentric conception of rationality has focussed on static taxonomies or classificational hierarchies of 'meanings' or 'concepts' ascending from the 'concrete' notion or reference (naming the individual particular, sense datum or 'token') to the progressively more 'abstract' generalizations or concepts (types) which the concrete notions embody or instantiate. In other words, rationality is conceived in terms of a progressively more general or abstract representation of the real world in the substance or content of word-based concepts. Both Harris (1996) and Gibson (1979) have looked critically on this abstract/concrete or type/token ontology in their respective areas (see also Hutton, 1990; Jones, 2017b).

By contrast, Harris (2009a) takes activity itself, situated and time-bound, as the locus and criterion of the diverse and often contradictory *rationalities* which active subjects (individual and collective) develop, promote and endorse. Practices have their own rationality—packing a suitcase is not putting up a fence—whether or not they involve verbal communication at all, and the criterion for rationality for any verbal sign-making practice is precisely in its integrated contribution to a purposeful programme of action. There can be no universal rationality, therefore, and no segregated linguistic rationality.

Similarly, activities of 'interpretation' or 'sense-making' do not involve the subsumption of particular instances under a more general and already established classification but the creation of a quite novel link between or within ongoing experiences or events: a step forward rather than a retroactive absorption or inclusion within the 'same' category or cognitive space (cf. Jones, 2017a on 'instrumental abstraction'). Even recognition, or repetition, of a familiar linguistic element (the 'same word') is itself a novel, newly contextualized and reflexive communicational contribution to an ongoing situation or experience.

Secondly, Harris argues that the 'language myth' is but one manifestation of a more general 'communication myth' in Western culture (Harris, 2002) for which all forms of communication involve transmission of meaning (or 'information' in modern parlance), a communicational model which is applied in turn to other ways in which human beings connect to one another and the world, including perception.

Thirdly, behind and within the myth, according to Harris, is a more fundamental sociological conception or assumption in Western culture which Harris (2002) refers to as 'somatic particularity': the primary separateness, alone-ness, or a-social independence of the individual human being with their own bodily make up, sensory experiences etc. From that perspective, sociality appears as a derivative phenomenon whose mode of construction from individual human atoms is a puzzle requiring its own explanation, as evidenced by speculative 18th century accounts (Taylor, 1992). While the integrationist position takes individual communicational experience as its bedrock, an individual person is not a self-contained atom of humanity to be somehow connected up to other individuals by a further set of collectivising mechanisms; the individual is taken to be already a member and participant contributor to a particular community or communities, whose very development and continuing existence as an individual presupposes a concrete 'communicational infrastructure that must be in place before, as individuals, we can engage in any communication process whatsoever' (1996, p. 28). Harris describes this infrastructure as involving 'factors of just three kinds'—'biomechanical', 'circumstantial' and 'macrosocial' (Harris, 1996, *passim*) – on the

⁸ Though see Jones (2017a) for an alternative to the conception of linguistic 'orders'.

grounds that ‘these three between them suffice to identify any human enterprise whatsoever’ (1996, p. 28).⁹ Our communicational experiences are therefore experiences of connecting with others and the world as we engage with them and understand them. If Gibson’s visual system has legs, Harris’s sign-maker has a personal identity, a biography and ongoing responsibilities—as a daughter, a father, a leader, a lawyer, a linguist, etc. Such a perspective allows us to re-affirm the irreducibly moral character of human communicational practices and relations and to appreciate, thereby, the extent to which the universalising technical-mechanical frameworks of modernist linguistic ‘science’ represent an ethical cleansing of the human communicational condition (Harris, 1987). To what extent this integrationist insistence on moral responsibility in communication is compatible with E-approaches to language and cognition remains to be seen.¹⁰

4.2. Sign-making

Once we abandon the idea that communication is the *transmission* of words or other signs then the alternative is to see communication as the *making* of signs by the ‘observable human beings’ involved. However, the sense in which signs are *made* requires clarification.

Firstly, this ‘making’ is not to be narrowly equated with sensuous moulding or fabrication of specially designed communicational materials or artefacts, as we commonly assume to be the case with speech and writing or, more generally, with the production of artistic or utilitarian objects. When we listen to, or overhear, a conversation, read a book or enjoy a musical or dance performance, we are just as much sign-makers as the speakers, writers, musicians or dancers. The making in question, then, is a matter of what we are able to do with, or *make of* whatever we (and relevant others) are doing, of what is going on (or is noticeably absent) in the given situation in relation to our current business and continuing life journey. Furthermore, we learn from the earliest age that our own actions and demeanours are meaningful and consequential for others present and learn to control and design them, however imperfectly, in line with our projection of possibilities for joint or solo action or expectations of others’ responses. In other words, since signs are not *sent*, sign-making is an irreducibly *self-communicative* endeavour both in situations of direct interpersonal engagement as well as solo action and experience (Harris, 1996, pp. 167–185).

Secondly, while integrationism has often been taken to task for negativity towards mainstream linguistic research, it has in fact advanced a positive and singular perspective on communication through placing a notion of *integration* at the heart of its anti-segregationist semiology of ‘making’: ‘there is no communication without integration’, as Harris asserts (1996, p. 258). He explains:

‘The integration appealed to here includes the whole range of processes and strategies by which people strive to connect their own actions and objectives with those of others, and to co-ordinate simpler activities into higher-order complexes. Much if not most of what we do every day, from walking to talking and from drinking to thinking, demands such integration. In acting thus, as required for the purposes of daily living, each of us constantly creates signs of many kinds. If we did not, we should rapidly become communicationally isolated from the other individuals who make up the community or communities to which we belong’.

The term *communication* itself then can be understood to include ‘all processes in which human activities are contextually integrated by means of signs’ (1996, p. 11). Activities ‘may be said to be integrated when in combination they produce results which could not have been achieved by any of those single activities independently’ (2009c, p. 69). As Harris puts it elsewhere: ‘Integration ... is the bringing together of diverse elements or activities into a coherent synthesis’ (2009, p. 163). While Harris claims that the ‘possible typologies of integration are as varied as the gamut of human activities’ (2009c, p. 72), he also argues that ‘temporal integration’ – ‘the integration of the present with the past and the future’ – ‘is more fundamental than any other’ (2009c, pp. 72–73). Temporal integration ‘relates to the human mind and our grasp of human experience’ (2009c, p. 73). Specifically: ‘The past we can only remember and the future we can only anticipate. But unless we could relate the here-and-now to *both* of these, our lives would not be those of human beings’ (2009c, p. 73). Even more fundamentally, he argues that ‘the concept of a sign is parasitic on recognizing the triple distinction between now, before, and after’ (2009c, p. 73). As a consequence, the integrationist sign is not something which pre-exists particular communicative acts or encounters but is formed in the time-bound communicative act itself as an integration of an open-ended range of activities (listening, looking, moving, acting) in and through which diverse programmes of activity of the relevant individual(s) along multiple projected timescales may be integrated in the pursuit of particular goals.

Thirdly, since the integrationist sign is made as a passing moment in the ongoing activity of a human subject, any value (or ‘integrational function’) thereby created is not a determinate quantity or quality to be captured, isolated and held for future inspection or identification. The integrationist refusal to countenance semiological reification at any level is captured in the principle of the ‘radical indeterminacy of the sign’ (Love, 1990). As Michael Toolan explains:

‘when meanings do emerge in speech events (as understandings, kinds of affect and support, and commitments), these remain provisional and contingent on the surrounding circumstances in ways that entail that those “meanings” can never transcend the local conditions of their emergence’ (1996, p. 179).

⁹ See Toolan (2017) for a critical view of the three ‘factors’ and other integrational concepts.

¹⁰ See also Jones (2010) for a discussion of the disappearance of the ethical dimension of human being and action in ‘distributed’ approaches to cognition.

Any semiological determinacy adequate to the furtherance of any communicational engagement is therefore always a provisional, contextualised and revisable quality, a phase within our continuous communicational experience, subject to the unique temporal and circumstantial conditions of that engagement.

4.3. Bi-planarity, materiality and 'content'

Harris's view of the material aspect of the sign is articulated via a rejection of the conventional, segregationist 'bi-planar' model and holds significant implications for established and familiar distinctions between *perception* and *communication*, in fact raising the question as to whether any meaningful boundary can be established between them. 'Bi-planarity' is the doctrine according to which signs, linguistic or nonlinguistic, combine two distinct 'sides' (or 'planes') of 'form', on the one hand, and of 'meaning' (or 'content') on the other (Harris, 1990; Love, 1990). Orthodox views generally take the 'form' of a sign to be its material or perceivable side while 'meaning' (or 'content') constitutes its intelligible or conceptual side, often conceived as a 'mental state' or 'representation'. Despite any common sense appeal it may have, bi-planarity offers a semiological picture fraught with paradox and contradiction. Thus, the 'form' of the sign is generally considered to be intrinsically meaningless or contentless, thereby relegated to a status akin to a physical (i.e., non-semiological) object. The 'meaning' or 'content' of the sign, by contrast, subsists somewhere and somehow as an intangible and intrinsically 'form-less' though nevertheless somehow determinate and encapsulated entity, linked arbitrarily or by association with its formal vehicle: a classic dualist conception—material form animated by immaterial concept.

This dualistic metalinguistic framework underpins the familiar kinds of linguistic codification, from dictionary making to the more esoteric theoretical systematizations of the academy. For any segregational procedure of this kind to be feasible, both 'planes' of the sign need to be determinate and invariant so that 'the same sign' can be identified, recognized and repeated across multiple instances. As Harris explains:

'The same logic of invariance applies with equal force to the form of a sign as to its meaning ... For if the form of a sign can vary from context to context, this is no less damaging to a fixed-code theory of communication than if the meaning can vary' (1996, p. 158).

For Harris, '[t]he integrationist proposal is that dualist assumptions about form and meaning do not provide a very good basis for approaching these questions in the first place' (2000, p. 67) and he illustrates the integrationist rejection of bi-planarity in the following way:

'For example, driving home from the city centre, I may know that I have to take the first turning on the left past a particular tree in order to follow the shortest route to where I live. So I look out for this tree, and when I see it, I change down into low gear, and move into the left-hand lane, preparing to make a left turn. In this way, I make the tree a landmark. I confer upon it a certain semiological value. You might say, perhaps, that for me the tree "means turn left here". But this would be an impoverished description of the facts of the case; the tree does not mean "turn left here" if I am travelling in the opposite direction. What is happening is simply that I rely on seeing the tree in order to integrate certain programmes of activity in my daily journeys, and there is no way this meaning - i.e. integrational function - can be stated short of describing exactly the circumstances that give rise to it' (2009c, pp. 76–77).

Harris emphasises the significance of this argument for his critique of bi-planarity:

'It is important to note that none of this means (a) that somehow the physical tree has now become a "form" with its own "meaning" (e.g. "Take the next left"), or (b) that one object, the tree, now "stands for" another object, the first turning on the left, or (c) that a mental image of the tree, tagged with the conceptual "take-the-next-left" label, has now been added to my brain's stock of equipment. To refer to the tree as a *sign* - at least in the sense that integrational semiology construes that term - implies simply that I recognize and contextualize it in a certain way in relation to certain activities ... The tree is a sign only insofar as I *make* it a sign' (2000, pp. 68–69).

Harris goes on (2009c, p. 77):

'Perhaps there is a temptation to say: "All the same, the tree still had the potential for functioning as a sign, and could have done so if I had been driving with due care and attention. So ought we not to say, rather, that the tree retained its meaning as a landmark, but the careless driver failed to give it the appropriate interpretation?"

To which he replies:

'If there is any such temptation to describe the semiological situation in this way, it is a temptation best resisted. For otherwise we are already on the slippery slope to decontextualizing the whole episode and reifying the "meaning" as a quasi-permanent value attached to the tree itself as "form". *That is the slippery slope that leads directly, in the case of languages, to postulating fixed codes of forms and meanings supposedly known to all members of the linguistic community*' (our emphasis) (Harris, 2009c, pp. 77–78).

As Harris explains, 'the temptation—psychologically—is to detach the "meaning" from the activities and nail it firmly to the static form (or anything else that looks like a formal constant)' (2009c, p. 78) while for integrationism 'a sign is not a sign until it is contextualized: *the act of contextualization and the establishment of the sign are one and the same*' (2009c, p. 72;

original emphasis). By the same token, the entire perspective of 'meaning' ('content') of signs is radically transformed through this rejection of bi-planarity. With specific reference to word meaning, for example, Harris argues:

'languages are not systems for the expression of thoughts: the essential function of words is the contextualized integration of activities. From that integration come what are called the "meanings" not only of words but of the many varieties of non-verbal signs that human beings have developed' (2008, p. 112).

He goes on:

'Meanings are not concepts attached more or less permanently to forms (as on one interpretation of the entries of conventional dictionaries). Nor are they "mental representations" in the minds of those engaged in acts of communication, or in the collective mind (if there is such a thing) of any community. Meanings are values conferred upon signs by their role in articulating the integration of activities' (2009c, p. 76).

However, Harris does not simply dismiss the semiological issues that the conventional discourse of 'meaning' or 'content' is attempting to address:

'For the integrationist, content is not an illusion but a communicational construct ... What we call "content" is always a function of the integration of two or more communication processes. And the reason why content is often hard to pin down is that the integration itself is complex and open to more than one interpretation'. (1996, p. 241)

In other words, the problem of 'content' is re-contextualised with reference to how sign-making activities are themselves integrated into other activities in particular contexts, i.e., how they fit into, enable or project simultaneous or subsequent integrational sequences. For example, goods may be delivered via walking, driving or cycling, activities which require of their subjects quite different and independent semiological proficiencies. But to customers receiving a delivery at the door these modes of locomotion are 'all the same'—we might say that they have the 'same content'—in terms of fulfilling the projected integrational requirements for the transactional process as a whole on that occasion. Harris's point is that it is in terms of such situation- and activity-related criteria that we also judge whether words 'mean the same'.

As noted above, the segregationist view of linguistic communication is predicated on the assumption that linguistic communication is effected via sensory experience, i.e. that the signs of speech, writing, gesture, etc can be transmitted because they can be heard, seen, or felt. As Harris notes: 'The basic assumption in the Western tradition has always been that signs "ordinarily" perform their function by way of the usual channels of sense perception' (1996, p. 109).

Furthermore, as Harris argues, this same tradition assimilates the process of perception itself to a transmission model of communication: this 'communicational model of model of how the senses work in turn buttresses the thesis that in speech and other forms of human intercourse the signs used must be of such a nature as to make them accessible to the senses, this being the only mode of direct contact between one human being and another' (1996, p. 116).

On first approach, there may indeed appear to be no alternative but to ground any view of communication in perceptual activity, in effect thereby ceding theoretical and explanatory primacy to perception over communication. As Harris himself notes: 'Speech ... has to be audible if it is to have any semiological function' (1996, p. 75). And further: 'All signs have a biomechanical basis, provided by the human body and its sensory equipment ... No semiologist can afford to ignore these biomechanical factors, since in the end they determine limits beyond which communication is not possible' (2000, p. 85). On that basis, a particular perspective on the necessity of a *material* dimension to signhood forms one of the central axioms of integrational semiology: 'What constitutes a sign is not given independently of the situation in which it occurs or of its material manifestation in that situation. (1996, p. 154). Nevertheless, Harris's critique of bi-planarity leads him to a quite different view of the relationship between the perceptual and the semiological:

'To describe something as a sign in integrational terms is to say nothing about its physical constitution. (It may have no physical manifestation at all: not doing something may be a sign, as may be the absence of something). All that is implied by calling something a sign is that it has a semiological value or function of some kind' (1996, p. 116).

Harris therefore rejects the assumption that 'words can be treated like material artifacts' (1996, p. 95), an assumption which licences the view of the *formal* side (or 'plane') of the sign as autonomous and invariant, insisting that 'the spatio-temporal continuity of objects is only contingently related to their semiological function, if they have one' (1996, p. 97). He goes on:

'A sign ... is not a physical object or type of object ... this is not to say that marks on the road or on paper are semiologically irrelevant, but it is not their physical constitution or configuration that makes them signs' (2009c, p. 67).

By contrast, the integrational sign, as the fruit of the here-and-now exercise of communicational powers in context, 'belongs' to the subject in the heat of the moment of creation, in his/her active engagement with things as a link in an onward programme or journey. The sign as a sign does not therefore have an autonomous form which could be perceived prior to, subsequent to, or independently of the subject's sign-making (sign-forming, Jones, 2011) activity. To put the matter even more bluntly: *signs as signs cannot be perceived* (Duncker, 2019). If we can see the tree as a landmark it is only by *making a sign*, only through taking the tree as a point of reference for orienting ourselves in movement (real or imagined). In terms of the audibility of speech, then, we must again be careful in our interpretation of Harris's position. Speech must be heard, but it can only be *heard as speech* through engaging with it linguistically: *to hear speech is to speak*. We can of course record someone speaking but the audible sounds recorded are not speech: speech will result when we hear, in the recording, what someone is saying.

4.4. Perception as sign-making?

On the face of it, Harris's critique of bi-planarity, specifically the rejection of the objective, invariant autonomy of linguistic (or communicational) *form*, implies a complete eradication of any boundary between perception and communication, rendering perceptual activity itself a fundamentally communicational (semiological) process. It is certainly the case that the main thrust of Harris's discussion of perception is to refute the 'communicational model of the senses', that is the idea that seeing, hearing the world is a matter of receiving and interpreting signs. As he puts it: 'Our senses do not have to have signs to interpret: they can get on perfectly well without them' (1996, p. 175). Harris makes his case as follows:

'it may well be true that my brain does many complicated neurological things in order for me to have even the most trivial visual experience, like seeing a boiled egg on the breakfast table in front of me. *But it is a plain category mistake to suppose that what the brain does for me in this case involves or consists in the interpretation of signs. What I see on the breakfast table is not the sign of an egg: it is an egg, or rather, the visible part of it.* At least, I hope it is ... But neither this nor the possibility of any other visual deception makes it plausible to regard my seeing it there on the table as a matter of interpreting signs' (Harris, 1996, p. 174; our emphasis).

Harris is also forthright in his critique of approaches which view perception as fundamentally involving some kind of conceptual interpretation or 'cognitive processing' applied to sensory 'data':

'If I see a birch tree, I see a birch tree. I do not first of all see something 'looking like a birch tree', and then 'form a belief' about what I am seeing. That only happens if I do not know what it is. Perhaps I cannot tell the difference between a birch and an oak, or perhaps it is getting too dark to see properly, or perhaps my eyesight is just playing tricks. These are possibilities. But in the more straightforward cases, I just see a birch tree, and that is the end of the matter' (2009b, p. 94)

For our purposes, however, that is not quite the end of the matter since the quoted passage continues:

'That [i.e. seeing a birch tree], to be sure, *is an interpretation*. But it advances no philosophical inquiry to suppose that every case of seeing birch trees is problematic' (2009b, p. 94; our emphasis).

Thus it would appear that, for Harris, seeing a birch tree (in this example) is a semiological process ('an interpretation'), though 'interpretation' is to be understood as *making* rather than *receiving* (and cognitively processing) signs. One might perhaps expect Harris to be saying or implying that all perception is communication (sign-making) in the integrationist sense. But it is at this point that Harris also explicitly introduces a distinction between perception and communication which is confirmed and elaborated in a number of different works, as for example in the following passage:

'It is important to add that, for the integrationist, *sense perception as such is not knowledge*. Saying 'I see a birch tree' *already goes beyond sense perception*. Knowledge in such cases begins by identifying what is seen. The same applies mutatis mutandis to all sensory experience. When people speak of the 'evidence of the senses' that already presupposes interpretation of sensory experience. The merely passive awareness of some sensory stimulation is not enough. In order to identify what is seen, we must at least integrate present visual experience with past visual experience. *Any account of knowledge which omits the integrational role of memory has no claim to serious attention*' (2009b, pp. 94–95; our emphasis).

And so Harris retains a category of 'sense perception' (or even 'sensory experience') which is initially (and may remain) 'uninterpreted' and which does not 'constitute knowledge' prior to 'identification of what is seen', i.e. prior to integration via memory, a process which takes us 'beyond' the visual experience in the present. This approach to perception in Harris motivates the distinction he draws between perception and what he calls 'observational knowledge':

'Some philosophers speak of 'perceptual knowledge', which is described glibly as 'the sort of knowledge that we get about the things around us by looking at them, feeling them, tasting them, and so on' (Dancy, 1988: 1). This idea is a prime candidate for demythologization, since it is far from clear that we get any sort of knowledge in this way. For an integrationist it is important to insist that in order to know anything about 'the things around us', whatever we see, feel, taste, etc. has to be interpreted, i.e. integrated into other patterns of experience' (2009b, p. 164)

He goes on:

It therefore seems less misleading to call what we derive from observation 'observational knowledge' rather than 'perceptual knowledge'. Observation, *as distinct from mere perception, is not a passive registration of stimuli*. 'Observational knowledge' is the knowledge created through integrating sensory stimuli with what has been remembered from previous experiences ... and what might be expected from the present situation' (2009b, p. 164). In other terms: 'sights, sounds, tastes, etc. become useful only when leading beyond the *visual, auditory and gustatory stimuli themselves*' (2009b, p. 85; our emphasis).

Furthermore, Harris often relies on a discourse which draws quite directly on traditional accounts of perception, despite his aversion to the psychology of perception generally. Thus he distinguishes between perception as such which he describes as 'the passive receipt of an ocular image' and the semiological (integrational) activities of observing, examining etc. in which signs are made from such 'optical images' or 'visual images' (2009b, p. 164). Elsewhere, appealing to the Robinson Crusoe story, Harris draws on the discourse of a theoretical tradition in the psychology of perception which he may have been expected to contest:

'Both retinal image and aural stimulation are physiological components which play a role in visual and auditory communication respectively. But an integrated sequel builds on these components in ways for which, in themselves, they afford no basis; that is to say, in ways which depend on the circumstances. Thus, for example, seeing a footprint in the sand is not in itself a reason for going in fear of one's life'. (1996, p. 71; our emphasis)

We note, then, Harris's use of the terms 'retinal image' and 'aural stimulation' which are considered as intrinsically 'physiological' (i.e. non semiological) phenomena (or 'stimuli', using discourse from the behaviourist tradition) prior to their interpretation via an integrational sequel. But the term 'retinal image' betrays its philosophical roots and, in particular, its embodiment of the well-known 'homunculus fallacy' and accompanying logical regress (which Harris is elsewhere at pains to reject): an image for whom? Who sees the image prior to its 'identification'? On that basis we see the gap in Harris's argument in the above case. Robinson Crusoe's response to 'seeing a footprint in the sand' is indeed an 'integrated sequel' in Harris's sense, giving a semiological character to the whole mini episode in question. But Crusoe is responding not to an uninterpreted 'retinal image' but to 'a footprint in the sand', an *identification*, in Harris's own terms, which already involves the exercise of integrational proficiencies (including memory).

Harris elaborates his distinction between 'sensory experience', which does not involve signs, and 'self-communication' in the following way:

'When I dip my toe in the water I simply feel something which is wet and hot, or cold, or lukewarm, etc.; but these sensations and my judgement as to the wetness, heat, etc. require no intermediating sign. Nor do they have any semiological function at all until I treat them as signs for purposes of some further activity'. (1996, p. 177)

Harris explains further:

'Is there any intermediating sign involved when I hear the sound of my own voice? In the auditory sensation, no. But having an auditory sensation is not monitoring. The whole difference is that monitoring implies circumstantially relevant criteria of judgment. So it is with the temperature of the water. That my toe feels something hot, cold, etc. is not a sign. But if I judge from the sensation that the temperature of the water is right or not right, that it is an indication of the temperature of the larger body of water of which my toe made contact with only a small part etc., then I take that sensation as a sign. "Right" means in relation to some activity projected as part of a potentially integrated sequel. In checking the temperature with my toe, I construct an assimilative sequel, which may, in the right circumstances, be integrated with an enactive sequel (e.g. taking a bath, going for a swim, or deciding not to)' (1996, p. 177).

Harris's distinction between merely feeling warm (disinterestedly, one might say) and judging temperature for a particular purpose certainly has merit but arguably provides quite shaky ground on which to pitch a principled general distinction between perception and communication, particularly if one adopts the 'lay oriented' perspective which Harris advocates. It is perhaps noteworthy that Harris argues that '*my toe feels something hot*' rather than '*I feel something hot*', a formulation seemingly chosen to emphasise the merely 'physiological' dimension of the experience. This mereological shift is again on display in Harris's claim that '[o]ur senses do not have to have signs to interpret: they can get on perfectly well without them. *They may need to be able to react in various ways to features of our environment*'; but that is a different matter' (Harris, 1996, p. 175, our emphasis). Similarly, it is not obvious that there is an 'auditory sensation' in hearing my own voice which is separable from or independent of my experience of hearing my own voice, the latter being an identification and, consequently, a semiological matter in Harris's terms. More generally, it is difficult to see how any such conscious, self-aware *experiences* of a human subject could be so categorically relegated to non semiological status, given the principles of integrational semiology we've been discussing. Any conscious experience of this kind reflects not merely the intrinsic properties of materials sensed, or of human tissue, but also depends on previous experiences and encounters with such materials as well as the present circumstances and expectations of the self-aware subject. If this is not to deny the pragmatic distinction that Harris draws in relation to his two contrasting cases of feeling warmth, it should also remind us that very many of our sometimes most profound, enjoyable and undeniably communicational (semiological) experiences—listening to music, laughing at a story, taking pleasure in watching our children play, etc., – are quite involuntary and uncontrolled in terms of how they 'work on' us and, at the same time, come with no particular 'programme of activity' or specifiable utilitarian value attached. By the same token, the effortless exercise in the *present* of such skills as playing the piano or singing in harmony, while undoubtedly honed and developed through *past* practice, may not feel to the proficient performer as if *memory* of past performances is involved or being invoked in real time (cf. Jones, 2011).

On those grounds, we might argue, then, that Harris's undoubted radicalism in the area of communicational theory and philosophy is somewhat offset, perhaps even compromised, by his views on perception, where a commitment to traditional perspectives, including casual use of 'retinal image' discourse, is clearly evident.¹¹

5. Comments on integration from an Ecological Psychology perspective

5.1. Setting the scene: seeing a cat

I would like to begin the comments on integrationism from an ecological point of view by contrasting quotes from Gibson and Harris, both of which have to do with seeing a cat. I begin with Gibson:

'Consider an adult, a philosopher, for example, who sees the cat on the mat. He (sic) knows *that* the cat is on the mat and believes the proposition and can say it, but all the time he plainly sees all sorts of wordless facts [which Gibson proceeds to describe/designate with words] - the mat extending without interruption behind the cat, the far side of the cat, the cat hiding part of the mat, the edges of the cat, the cat being supported by the mat, or resting on it, the horizontal rigidity of the floor under the mat and so on. The so-called concepts of extension, of far and near, gravity, rigidity, horizontal and so on, are nothing but partial abstractions from a rich but unitary perception of *cat-on-mat*. The parts of it he can name are called concepts, but they are not all of what he can see' (Gibson, 1979, p. 261).

'This (the ecological account) says that when the young child sees the family cat at play, the front view, side view, top view, and so on are not seen, and what gets perceived is the *invariant* cat. The child does not notice the aspects or perspectives of the cat until he is much older; he just sees the cat rolling over. Hence when the child first sees a picture of a cat he is prepared to pick up the invariants, and he pays no attention to the frozen perspective of the picture, drawing, photograph, or cartoon. It is not that he sees an abstract cat, or a conceptual cat, or the common features of the class of cats, as some philosophers would have us believe; what he gets is the information for the persistence of that peculiar, furry, mobile layout of surfaces.

When the young child sees the cat run away he (sic) does not notice the small image but sees the far-off cat. Thus, when he sees two adjacent pictures of Felix in the comic book, one large at the bottom of its picture and another small higher up in its picture, he is prepared to perceive the latter as farther off. When he sees the cat half-hidden by the chair he does not perceive a half cat but a partly-hidden cat, and therefore he is prepared to see the same thing in a drawing.' (Gibson, 1979, pp. 271–272).

From this flows a more general point:

'The perception of the persisting identity of places and objects is more fundamental than the perception of differences among them. We are told that to perceive something is to categorize it, to distinguish it from other types of things that it might have been. The essence of perceiving is discriminating. Things differ among themselves, along dimensions of difference (on this view). But this leaves out of account the simple fact that the substance, place, object, person, or whatever, has to last long enough to be distinguished from other substances, places, objects, or persons. The detecting of the invariant features of a persisting thing should not be confused with the detecting of the invariant features that make different things similar. Invariants over time and invariants over entities are not grasped in the same way' (Gibson, 1979, p. 249)

In consequence: 'You do not have to classify and label things in order to perceive what they afford' (Gibson, 1979, p. 134). On this basis, Gibson contextualizes and clarifies the terminology he is using with respect to his novel view of perception:

'*Information*, as the term is used in this book (but not in other books), refers to specification of the observer's environment, not to specification of the observer's receptors or sense organs. The qualities of objects are specified by information; the qualities of the receptors and nerves are specified by sensations. Information about the world cuts right across the qualities of sense. The term *information* cannot have its familiar dictionary meaning of *knowledge communicated to a receiver*. This is unfortunate and I would use another term if I could. The only recourse is to ask the reader to remember that picking up information is not to be thought of as a case of communicating' (Gibson, 1979, p. 242).

Now let us take a look at Harris's view:

'When I say I see a cat at the end of the garden, I am not reporting some mysterious activity in my brain: I am reporting my spontaneous interpretation of a visual experience. Whatever may be the neuronal activity involved in this experience, I know nothing about it, any more than the man who mistook his wife for a hat knew what was going on in his cerebral cortex. Nor indeed does the neurophysiologist know exactly what was going on. The neurophysiologist simply hypothesizes that some neural connexions are not working properly. In short, he explains it by invoking his own metaphor or model of the mind. But why there should be any mistaking one's wife for one's hat remains unexplained' (2009b, pp. 163–164).

¹¹ See Conrad (2020) for a discussion of what appear to be apparent tensions, or a change of emphasis or perspective, in Harris's work with respect to the relationship between perception and sign-making.

'Integration, as the integrationist understands it, is the bringing together of diverse elements or activities into a coherent synthesis. What is going on in the example described above [the cat in the garden] is a process of integration by which I transform an optical image into a meaningful sign of something happening here and now in my own life.

If there are any readers in any doubt about whether this is what 'really' happens, they might dispel that doubt by reflecting on the fact that without some such process there need be no connection at all between the retinal images, my identification of what I saw, and my understanding of the whole experience as that of seeing a cat ... at the bottom of the garden (2009b, p. 163).

Harris goes on:

'For an integrationist it is important to insist that in order to know anything about "the things around us", whatever we see, feel, taste, etc. has to be interpreted, i.e., integrated into other patterns of experience. ... Observation, as distinct from mere perception, is not a passive registration of stimuli. "Observational knowledge" is the knowledge created through integrating sensory stimuli with what has been remembered from previous experiences (as in the case of seeing the cat at the bottom of the garden) and what might be expected from the present situation' (2009b, p. 164).

Harris explains:

'The experience of seeing the cat does not somehow "consist in" saying silently or subconsciously to myself "There's a cat ... etc.". But it does consist in interpreting certain visual images as signs of a cat. It is knowledge on the basis of which I might take further action, such as banging on the window or shouting "Shoo!" My expectations of cat-behaviour are built in to my recognition of this animal as a cat. It has nothing to do with any subliminal ratiocinations about past and future. Constantly pointing out that I might be mistaken (because of defective eyesight, failure to look carefully enough, a phobia about cats, etc.) is simply miaouwing up the wrong tree. I might indeed be mistaken. It might subsequently turn out to be a different cat or not a cat at all. But that is not the point. The point is that certain visual images have already been integrated as signs into a programme of activity. The fulfilment of that function – however much the sceptic may complain – is what constitutes an item of knowledge. ... Meaning, for integrationists, "is now" (Harris, 2009b, pp. 165–166).

'[T]o sum up so far', Harris continues: 'if the integrationist approach to these matters is on the right lines, we do have first-order knowledge of our own everyday experiences, because we actually create our own interpretations of those experiences' (2009b, p. 166).

The idea that perceptual experience requires that we 'interpret' visual images as signs and integrate the visual images as signs into a 'program of activity' would seem to be anathema to the ecological conception of direct perception as resonance to structures of the world. The integrationist idea may therefore appear consonant in some ways with such indirect perception theories that require that an image be interpreted (e.g., Gregory, 1972; Miller and Johnson-Laird, 1976). However, Harris explicitly critiques constructivist, representational (information processing) approaches to perception and knowing:

'The [integrationist] view just outlined may seem to coincide – at least broadly – with that held by those psychologists who favour what are sometimes called "constructivist" theories of perception (Eysenck and Keane, 1995, pp. 73–74). They hold that "our perceptions are created in us, and that they may be very different from the corresponding objects of the external world, as described by physicists" (Gregory and Zangwill, 1987, p. 608). Unfortunately, the failure to distinguish between knowledge and information is virtually endemic in the so-called "information-processing" approach to the mind, which still dominates large areas of cognitive psychology. All "information", it would seem, has to be "coded". But the construction of "codes" is not a crowning achievement of the human mind; for even rats, we are told, construct codes (Bruner, 1974, p. 222) – at least, those rats whose sad lives are confined to the psychologist's laboratory' (Harris, 2009b, p. 167).

Harris goes on:

'this jargon simply assumes the validity of extending the Classical code-plus-telementation model to cover not just communication from one individual A to another individual B within a given linguistic community, but to the "information" both A and B, along with all other human beings, allegedly "receive" from external sources in the natural world. In short, every sensory stimulus is conceptualized as the "reception" of "information" from elsewhere' (2009b, pp. 167–168).

For Harris, however:

'My perceptions and observations are not hypotheses, either constructed by me or by some part of my brain on my behalf. If I tell you I saw a cat, I am not putting forward a *hypothesis* about anything: I am reporting *having seen* a cat' (Harris, 2009b, p. 168)

The contrasts between integrationism and Ecological Psychology that these quotes illustrate form the background for the following points about the philosophy of integrationism, as seen from the point of view of Ecological Psychology. In these

comments I will first outline points wherein integrationism and Ecological Psychology are consistent and then where they are in contradiction.

5.2. Consistencies between integrationism and Ecological Psychology

Integrationism and Ecological Psychology (at least as stated by Gibson in 1979) are both committed to the open-ended and ongoing nature of the phenomena they encompass. For Harris, human communicational experience is open-ended—it cannot be specified ahead of time outside of the context of its actual occurrence. Likewise, perceiving, according to Gibson's new definition, is an achievement of the individual, a keeping-in-touch with the world, an awareness of something in the environment, and, importantly, it is a continuous act, an activity that is ceaseless and unbroken (1979, p. 221). Perceiving, in that it is ongoing and ceaseless, is also open-ended, as is the world and all the nested events within it (see also van Dijk, 2021.).

One consequence of rejecting the form/content distinction (bi-planarity) in signs as Harris does is the rejection of the type/token distinction in which the type (the meaning) has to be known ahead of the 'use' of any linguistic segment in a particular communicational activity. The parallel in Ecological Psychology is Gibson's refutation of the claim that we have to have the concept or classification of an object before we can perceive it. For example, Gibson originated the idea of affordance, that is, what the environment offers or affords for an organism's activity, and he is clear that to perceive an affordance is not to classify (and then name) an object or event (cf. Gibson, 1979, p. 134). Integrationism and Ecological Psychology both reject the illogic of claiming that we must have specific pre-knowledge in order to either communicate with language or perceive the world.

A third consistency is that both integrationism and Ecological Psychology are concerned with actions/activities of whole and living humans/organisms. Gibson says: '... each eye is positioned in a head that is in turn positioned on a trunk that is positioned on legs that maintain the posture of the trunk, head, and eyes relative to the surface of support. Vision is a whole perceptual system, not a channel of sense (Gibson, 1966)' (Gibson 1979, p. 195). For Harris, likewise, signs only exist in the ongoing process of human beings communicating as whole, living, interacting individuals. Integrationism holds that there are no signs independent of the ongoing process of sign making, and Ecological Psychology holds that there are no organisms without environments and no environments without organisms (the mutuality claim). Human beings integrate their experience using signs; organisms exist mutually with their surrounds, which are affected and shaped by them and which affect and shape them. The sign 'belongs' to the subject in their active engagement with things, and is not analyzable separately from this activity. Might we term this phenomenon 'semiological mutuality'?

Finally, Harris critiques the communicational model of the senses, which Gibson also thoroughly undertakes. Both would claim that the brain does not interpret signs, and perception definitely does not equal the brain (or mind) 'interpreting signs'.

These four major areas in which integrationism and Ecological Psychology are consistent, and in agreement, point to the possibilities of mutual support and possibilities for development between the two approaches. But before such advances can be explored, we must take into account the points where the two approaches are contradictory.

5.3. Points of contradiction

First, Harris discusses what he terms 'temporal integration' which refers to past experiences as memories being integrated with present experience (observation, knowledge, and so forth). The traditional view that experience consists of moments, some of which are 'now', and others which are memories from the past or anticipations of the future is not questioned in integrationism. In contrast, the idea that experience/perceiving takes place over time, and that change and nonchanged are what are detected *over time* is central to Ecological Psychology. This idea is foundational and essential to the ecological analysis of what there is to be perceived, that is, the flow of stimulation as the organism goes about living, and of how it is perceived, that is, the detection of variants and invariants of stimulation. All of Gibson's final book is based on this idea (1979). On the ecological view, time does not require integration because it has not been 'separated' in the first place.

Second, Harris says that perception is not knowledge, i.e., knowledge begins with identifying what is sensed. Thus, sensing is perception, and identifying sensory experience is knowledge. This approach is consistent with the traditional aspects of integrationist thinking regarding the role of visual 'images' and consecutive 'moments' of experience. But, once again, Ecological Psychology takes a radically different stance. Perceptual systems are not channels of sensation, but ways in which whole organisms are in direct and ongoing contact with their changing surround. Perception is not the passive registering of stimuli (which then have to be judged or interpreted), but, rather, the active process of detecting change.

Third, according to Harris, experience depends on interpretation of visual images, but not on information, coding, or hypothesizing. The idea of a visual image is also a traditional view that is in direct contradiction to Ecological Psychology's emphasis on perceptual systems that function over time in direct contact with the surround. I propose that the contradiction inherent in the idea of a visual image (see above, and, also, Carello and Turvey, 2020) can be resolved by understanding perception as the direct ongoing resonance to a changing array of stimulation rather than as the receiving and interpretation of visual images. However, the statements by Gibson that perception is the 'pick up of information', even if he tries to limit the meaning of 'information', also form a contradiction if one assumes direct perception. This contradiction can be resolved by understanding what signs are and how they are created in the course of communicating. Mutuality, the meeting of organism and environment, is constantly forming and dissolving, in an ongoing open-ended process until the organism dies. This meeting, this ongoing mutuality, is the flow of affordances, which also form up

and dissolve as the organism goes about its life. There is no meeting with the environment, no flow of affordances, without a living organism. Human organisms, at least, create signs in their intentional lives and these signs are a type of meeting with the ongoing changing surfaces and other organisms that they encounter in the course of living.

Integrationism and Ecological Psychology each provide aspects of theory and method that may be seen as complementary. Ecological Psychology provides a way of understanding and studying how perceivers coordinate with their environment in direct, mutual relation, and integrationist theory shows how communicants coordinate with each other in forming signs. Each theory potentially provides what the other has not yet been extended to encompass and therefore points the way to its respective consistent and coherent extension—into language and communication for Ecological Psychology, and into perceiving and knowing for integrationism.

6. Comments on direct perception from an integrational perspective

6.1. Realism

Harris would have appreciated Gibson's search for a realist theory of perception which would provide 'support for the naïve belief in the world of objects and events, and for the simple-minded conviction that our senses give knowledge of it' (Gibson, 1967, p. 168). For example, in his rebuttal of Humean scepticism—also a target of Gibson's (1979) criticism—Harris presents 'a less tortuous way of dealing with Hume's "problem of induction" which 'consists in pointing out that there is no "logical gap" involved in basing future expectations on past happenings, or in supposing that there is a real table out there, responsible for our variable table-perceptions' (2009b, p. 41, our emphasis). Similarly, Harris described '[o]ur confidence about everyday reality' as 'confidence about the way our senses confirm one another, i.e. are integrated, at least in the immediate here-and-now' (2012, p. 21). Further, Harris argued that linguistic communication 'presupposes the validity of our perceptions (e.g., of grass, water, and the rest of the furniture of the world), and would not be much use for communicational purposes—that is, for the integration of human activities—if it did not' (2012, p. 54, our emphasis). At one level, this last statement chimes harmoniously with Gibson's view: 'we cannot explain perception in terms of communication; it is quite the other way around. We cannot convey information about the world to others unless we have perceived the world' (1979, p. 63). But any genuine convergence of views would depend on whether what Harris means by 'validity of perceptions' is compatible with Gibson, which is highly doubtful given the important differences between them.

As illustration, it is important to recall that Harris cautioned against any version of realism in which our ways of categorising, talking about or experiencing the world 'out there' actually correspond to, are caused by, represent or *encode* properties of this world (as per the Aristotelian 'pattern transference' model). As he put it:

'reality does not come equipped with its own "natural" classifications that are imposed willy-nilly on speakers and writers. The very idea of a "natural" classification is a product of familiarity with the well-established classificatory terms that are used for communicating about it. We integrate reality by means of these terms, and mistake the ease with which we do this for something else; namely, our ability to detect distinctions and values that are "really there"¹². It is rather as if repeated success in buying carrots from a greengrocer at so-much-per-pound convinced me that what I pay is exactly what carrots are really worth' (2012, pp. 20–21).

This is Harris's answer to Gibson's view of language as 'a code' (1996, p. 281) whereby words 'embody stimulus information, especially invariant information about the regularities of the environment' (1996, p. 281)—a straightforward (reocentric) surrogational (or representational) position in Harris's terms (1996, p. 127). The same criticism would also apply to Gibson's extension of his 'code' view to grammar and predication: 'the child's discovery of facts about the world can be predicated in sentences, not simply stereotyped in words'. For Harris, all such approaches once more reflect the interdependence of misguided conceptions of language and models of perceiving and knowing: 'the central error, an integrationist would say, is to think of real things as dictating the true assertions that can be made about them' (2012, p. 20).

He goes on:

'the Classical model of language, based on names and predicates, invites us to see the external world as having a parallel structure; i.e. as consisting of many different objects, each nameable, plus a range of attributes that either do or do not belong to each object. So language, in effect, provides a mirror image of the non-linguistic world' (2009b, p. 41).

Harris examines at some length how this 'long established reocentric semantics of the Western [language] tradition' (2009b, p. 154) has influenced theories of perception: 'Aristotle based his reocentric semantics on the assumption that the world is the same for all observers (De Interpretatione 16a). That is one way of dealing with the problem of perception, i.e. by not allowing it to arise' (2009b, p. 155).

¹² We note that Gibson's ideas of invariants that are the result of the perceiving/acting organism's relation to its surround and of perception as a process of resonating to these invariants do not fall into what Harris calls 'natural' classification (Harris, 2012, pp. 20–21). Perceiving/acting is not a process of classification as Gibson makes clear.

For Harris, by contrast, '[r]eality is misconceived when regarded as some kind of universal psycho-physical bedrock on which human lives and activities ultimately rest' (2012, p. 38). Harris further shows that we see just this Aristotelian semantic model in the traditional and still extremely widely held views of language acquisition as the learning of labels for objects:

'If you believe that a word gets its meaning by "standing for" some mind-independent thing "out there", this has the attraction of setting up a simplistic account of language learning in which the meanings of words can be taught to the uninitiated by pointing to the things in question. ("This is grass", or even more explicitly "This is what we call grass".) Hence the alleged explanatory process, beloved of philosophers, called "ostensive definition". Here it is supposed that merely by arranging a confrontation between a suitable sample of the thing and the name in question, the teacher can "show" the learner what the word means' (2009b, pp. 154–155).

This Harrisian critique¹³ would be the starting point for an integrationist response to those (e.g., van den Herik, 2019) who have tried to refurbish the reocentric semantics of ostensive definition with a Gibsonian metalanguage of 'education of attention'.

Similarly, though Harris would not necessarily have been troubled by Gibson's appeal to 'invariant structure underlying the changing perspective structure' as such, he would have objected to taking this position as license for the Aristotelian view that 'the world is the same for all observers' (2009b, p. 155). Harris's discussion of tennis, for example, sees him unquestioningly committed to those physical 'invariants' on which the playing of the game depends, including the players, the ball and the court. The tennis players, he says, 'are playing with the same ball and on the same court. There are not two balls and two courts, one for each player' (1997, p. 285). Furthermore, both players must 'recognize that they are playing with the same ball on the same court and act accordingly'. However, Harris insists that 'that recognition, integratively constructed and articulated, is not something external to the playing, but a contextualized feature of the playing itself' (1997, p. 285).

In other words, whatever 'invariants' may exist, people can only experience the world, including their own activity within it, in ways relevant to their practical business in particular contexts, making such experiences a semiological matter rather than 'structured by the surround through a process of resonance' in Gibson's terms. For example, whatever properties a tree may have independently of us (and captured in ambient light), seeing it as a landmark is not a matter of 'picking up' invariants but of the creation of an integrational value (the making of a sign) which enables and advances the orientational action and movement of the subject. For Harris, then, the conception of 'resonance' might simply be taken as a novel re-working of the pattern-transference or transmission model of communication.

In that light, one might still be puzzled by Harris's 'validity of our perceptions', a validity which verbal activity does not encode, transmit or embody but nevertheless 'presupposes'. Perhaps the perceptual discriminations Harris has in mind here might be better thought of as proficiencies in discrimination relevant to courses of action—Harris's 'operational discriminations' ('ODs') (Harris, 2009a)—proficiencies formed and honed (but never fixed) by the active subject through sustained experiences in the integration of all the myriad activities of daily life. On that reading, any 'classificatory' terms would not be—could not be—representations (communicational 'surrogates') of 'invariants' independent of human activity, but tools for the integration of activities (including observational and practical activities) in specific contexts. However, this approach does not seem be consistent with other statements by Harris relating to 'retinal images'.

6.2. Retinal images

The most obvious, and most fundamental, difference between Harris and Gibson is clearly over the existence and role of 'retinal images'. We have already seen that this construct of traditional physiology/psychology is central to Harris's own account of perception in which such 'images' ('sensory stimuli') are input to the interpretative (semiological) activity of the observing/acting agent in the creation of 'observational knowledge'. As Harris puts it:

'I look out of the window and I have the kind of experience that I would report as seeing a cat at the end of the garden. What that comes down to is that when I look out of the window *what a physiologist would describe as certain stimulations of my optic nerve* are somehow integrated with certain aspects of my past experience with cats' (2009b, p. 163; our emphasis).

Harris elaborates further in order to forestall any objection to this 'retinal image' based account:

'If there are readers in any doubt about whether this is what "really" happens, they might dispel that doubt by reflecting on the fact that without some such process there need be no connexion at all *between the retinal images, my identification of what I saw, and my understanding of the whole experience as that of seeing a cat* – or perhaps next door's cat – at the bottom of the garden' (2009b, p. 163; our emphasis).

However, for Gibson, as we have seen, the approach Harris sets out and defends here is anathema. It is particularly interesting in the context of this discussion that Gibson identified at the root of the retinal image fallacy the same, flawed sign-based, representation model of sensation continuously targeted by Harris in formulating his integrationist perspective on communication. (Harris discounts any talk of perception as interpreting *signs* but is clearly happy with talk of interpreting/

¹³ Harris's commentary here nicely complements the more detailed critical discussion in Burman (2008) of approaches to language acquisition in developmental psychology centred on naming and labeling.

integrating *images*: a distinction without a difference?) On such grounds, as we have seen, Gibson rejects a semiological view of perception altogether while Harris takes the view that, in particular circumstances of activity, 'I transform an optical image into a meaningful sign' (2009b, p. 163). One might argue, then, that, on this point at least, Gibson is the more consistent in extirpating this faulty transmission/representation theory of communication from accounts of perception. After all, Harris's position, uncharacteristically, appeals not to lay experience ('retinal images' anyone?), nor even to 'the psychologist' for that matter, but to an analytic construct of 'the physiologist' whose 'descriptions' one might expect Harris to question.

6.3. Affordance

In respect of Gibson's notion of 'affordance', it might appear that there is significant overlap with Harris's definition of integration—'the bringing together of diverse elements or activities into a coherent synthesis' (2009b, p. 163)—which embodies the mutuality or reciprocity of 'subject and object at the same time' which Gibson appeals to. Conrad's (2020) case of a boy climbing walls, for example, is offered as a clear cut case of integration: climbing is the novel result of a particular subject (with specific bio-mechanical proficiencies) acting purposefully and continuously on physical materials in particular circumstances. The resulting climbing action is the consequence of a concerted integration of all these factors. However, Harris may well have felt that applying the concept of 'affordance' to the wall, or indeed to any separate aspect or factor of the integrated activity, may involve at best a circularity and at worst a reification in the sense that it attributes to a part or parts of the activity a property, or potential, that only belongs to the concrete whole. If you succeed in climbing a wall, then the wall is climbable—you might say it 'affords climbing', though the next time you try you may fail. In that light, an 'affordance' is merely a (post-hoc) recognition of the achievement of integration of all the factors involved in the attempted activity.¹⁴ Furthermore, to say that 'affordances are perceived in the same way any aspect of the surrounding surfaces is perceived' (see above, p. 12) makes the perception of affordances an unequivocally interpretative, i.e. semiological, process in integrationist eyes: *seeing a wall as climbable* is a contextualized assessment by the subject of its climbability—the 'projection' of an integrated sequel (Harris, 1996), a projection that may in fact be misguided or wrong, just as we may be wrong about our recognition of a person or our identification of a birch tree.

7. Conclusions and reflections

In this paper, we have taken a long look at the theoretical contributions of James Gibson and Roy Harris, two scholars who, in Ecological Psychology and the integrationist philosophy of communication, have left equally inspiring and vibrant, but also incomplete and far from unproblematic, intellectual legacies. At present, alongside independent work in these traditions, there is increasing interest in their compatibility or, more specifically, in the value of co-opting aspects of Harris's integrationism to fill acknowledged gaps in Gibson's treatment of language and communication. Our contribution, such as it is, has explored points of apparent divergence as well as potential areas of convergence within the conceptual foundations and assumptions of the two approaches, as we understand them. Acknowledging that other scholars may well see things differently, we hope that our own critical comparison of Ecological Psychology and integrationism may help to inform, advance or provoke debate within and across these research fields around the main problems and conundrums which we feel need to be satisfactorily addressed in any attempt at reconciliation.

The central issues in the relationship between Gibson and Harris concern the basis on which each scholar rejected traditional thinking about perception and the contrasting paths they took to resolve the problems they identified. Since the traditional view revolves around a *transmission* and *representational* model of communication, its rejection entails a re-thinking and re-configuration of *both* perception *and* communication, either by revisiting the scope and relationship of such notions and/or by developing novel explanatory principles for either domain. We have argued that Harris and Gibson clearly have something in common in their rejection of the traditional semiology of perception: for both scholars we see *the layout of things and their surfaces*, not *signs or representations* (of things) to be decoded or further processed. At the same time, however, we have shown that there is considerable divergence in the ways that the two scholars grounded and developed their alternative perspectives.

Common to their motivation and rationale was a *naturalistic* orientation aimed at the extirpation of a ubiquitous *verbalism* (Harris, 1996) within Western thinking, that is, the view that language, and more specifically naming, categorization and verbal (literate) reasoning, are the foundation and height of all distinctively human faculties. Both argued that our sensuous experiences are the foundation of the mutuality of people-and-their-world, the primary means whereby, in our vital actions and movements, we apprehend the world and ourselves in it. For his part, Gibson aimed to establish perception as a natural capacity of living organisms, prior to and independent of what he saw as the socially conventional, 'artificial' categories or classifications that linguistic or other communicational practices might subsequently express or presuppose. Similarly, Harris

¹⁴ See Conrad's discussion in the context of Gibson's notion of affordance (2020, p. 22): 'Looking at sign-making as perception, then—perhaps unsurprisingly—tells us that the sign is formed relative to our purpose as well as to other factors in the situation perceived. The fact that we are not trying to figure out how to interact with one thing only, but with a dynamic of things in our surroundings, also tells us that we do not see a simple relation between ourselves and the thing we perceive, but a relativity between more factors. When we experience a thing, we see how it affects our interaction potential with a situation.'

describes our ‘capacity for making signs, as and when required’ as ‘a natural human ability’ (2000, p. 67), appealing not to any innate language faculty à la Chomsky but to the vital biomechanical capacities, on which our lives depend from the very beginning, to integrate ourselves with and into the world of people and things around us. Both scholars therefore took it that the reliable perceptual discriminations that animals (including the human animal) make in their journeying and acting cannot *presuppose* systems of conventional or public symbolic categorization.¹⁵ Further, such sensuous discriminations, developed, tried and tested as experiences of physical bodies (persons) being, moving and acting with other physical bodies, cannot be mere projections or constructs of an inner mind or subjective space but are the means and product of exquisite timing and coordination of attention and movement of the living person within the socio-material environment or ‘communicational infrastructure’ (Harris, 1996).

Furthermore, if there is no necessary verbal underpinning of perceptual discrimination in principle, both authors recognized the factual integration in social practice of linguistic or other communicational activities with perceptual or observational activity and experience. Seeing a birch tree, hearing a major 7th chord, reading a written text, spotting a high value Scrabble word, judging weight in kilos by sight or feel, etc—all such experiences demonstrate a simultaneous attunement of *both* perceptual/observational skills *and* linguistic usage for social interaction (and/or private judgement) in such a way that the relevant discriminatory capacities feel integral, involuntary, the linguistic terms themselves ‘transparent tools’ (Jones, 2017a). Both scholars also rejected an associationist account of such skills, Gibson with his ‘education of attention’ and Harris with his ‘integrational proficiencies’.

In his alternative to the traditional model, Gibson went for an overtly non-semiological (non-communicational) theory. Beginning from the assumption that organisms and their surrounds exist mutually, and mutually bring each other about, he developed a theory of ‘direct perception’ based on the idea of ambient energy arrays with which the organism’s perceptual systems (which include the whole body and the organism’s action possibilities) resonate *continually* through time—there is no ‘moment’ of resonance—and in this way ‘information’ concerning ‘invariants’ within energy arrays is ‘picked up’. Resonance understood in this way is direct perception and the basis of perceptually guided action. Thus, on what one might describe as a ‘perception-communication’ detector gauge, Gibson moves the dial to the right, as it were, lifting the ‘communication’ reading off and away from the ‘perception’ end to the left.

As we have argued, however, Harris might well have viewed the idea of ‘resonance’ with or between independently existing ‘invariants’ as a version of the classic Aristotelian pattern transference view in which a property or form of one material is ‘communicated’ to another via a natural, causal process. Given that the same communicational perspective is also at the heart of Western treatments of language and linguistic communication, the integrationist could argue that Gibson’s account of perception in fact, and despite his intentions, harbours a traditional semiology all the same. By the same token, any prospect of extending an Ecological approach based on direct perception to language and communication would founder, for the integrationist, on the postulation, within linguistic or communicational activity, of ‘invariants’ whose properties constitute ‘information’ to be ‘picked up’. For Harris, there is simply no invariant structure in what he refers to as the ‘material manifestation’ of linguistic sign-making. For Harris, trying to fix the form of a communicational act as an empirical fact is a positivist, and fundamentally segregationist, endeavour (‘bipolarity’). At the same time, talk of ‘information’ (which is available for ‘picking up’) appears to run against the grain of Gibson’s own desired mutuality. In response, an Ecological Psychologist might object that the ‘invariants’ in question do not exist independently of the organism but are an established function of the very mutuality of organism-in-environment. Furthermore, the notion of ‘information’ might be more suitably rendered in terms of the notion of ‘resonance’ which implies propagation (or dynamic harmonization) rather than transference.

For his part, Harris, by contrast, moves the dial to the left. His integrational alternative to the traditional treatment consisted in a new, *non-transmissional model* of communication, which claimed (some) types of perceptual experience, along with linguistic experience, as a sign-making or self-communicational activity. Harris could therefore agree with Gibson that our perceptual experiences of the world do not involve a mythical process of receiving and interpretation of signs and yet still retain a semiological account of perceptual activity (‘observational knowledge’) whereby relevant ‘values’ of things or experiences for individual people are generated as integral dimensions of their activities and movements. However, Harris’s radical revision/extension of communicational concepts does not entirely eclipse the domain of perception in his broader account. First, Harris admits a whole range of perceptual experiences which do not involve signs, and, therefore, *integration* in his technical sense, at all, such as the simple self-awareness of warmth etc. Secondly, Harris describes the properly semiological, or integrational, forms of seeing, hearing etc as a process in which ‘sensations become signs because—and insofar as—they integrate past memories with a current programme of action’ (1996, p. 176). The sensations in question are derived by a physiological (non semiological) process of *stimulation* involving initial ‘passive registration’ or ‘passive receipt’ (note the transmission metaphor!) of a ‘sensory image’, or ‘sensory experience’, or ‘retinal image’. From an Ecological point of view, Harris’s integrationism certainly offers a novel communicational departure in the idea of *making* signs rather than *receiving* them. However, the stumbling block is Harris’s insistence that perceptual ‘stimuli’ or, more damning still, ‘retinal images’, passively registered, are the physiological input to this semiological alchemy. Furthermore, the discourse of retinal *image* would itself appear to imply both

¹⁵ Note that one consequence of this explanation is that no one ever experiences language/signs as arbitrary or ‘purely conventional’ (Harris, 2006: Chapter 9; cf. also Dent, 1990 who comes to the same conclusion but beginning from Ecological Psychology).

a *representational* view as well as a pattern transfer model of perception/communication in which the form of the object perceived is first 'pictured' (by eye or brain?) prior to any subsequent interpretation.

Other possible sources of conflict between the two approaches relate to assumptions about the role of time and memory in perception and sign-making. Unlike Harris, Gibson rejects the traditional view of 'time's arrow' with its distinction between past, present and future and Gibson's conception of the developing sensitivity and attunement of the organism-within-its-environment displaces the idea of 'memory' of past experiences as a connecting (or integrational) link between past and future experience or action (see [Read and Szokolszky, 2018](#), for discussion and related references).

What prospect, then, for a reconciliation or productive relationship between Ecological Psychology and integrationism? Clearly, given the divergences discussed, one might simply admit defeat and accept that it is impossible to develop a unitary account of perception and communication across the two approaches. One might therefore prefer to rest with an acknowledgement that Ecological Psychology and integrationism offer striking insights confined to their own separate areas and provide aspects of theory and method that might be seen as complementary: Ecological Psychology in ways of understanding and studying how perceivers coordinate with their environment in direct, mutual relation; integrationist theory in a critical perspective on the linguistic and communicational models which inform particular cultural ideologies and practices. Indeed, it might be ill-advised to believe that all the phenomena and experiences treated, at least in the Western tradition, under the general terms 'perception' and 'communication' could be satisfactorily unified or distinguished in any universally self-consistent or coherent fashion. In integrationist spirit, it would certainly be unwise to think that there is 'really' a truth about the existence of and relationship between two such processes to be captured in our discourse or classificatory framework. The question, rather, would be to what extent such approaches are useful or enlightening for us in developing new critical perspectives on long-established 'myths'.¹⁶

For good or ill, however, such a fudge will not settle the matters at stake, since, for one thing, such a *segregation* of linguistic and communicational experience from perceptual experience would directly contradict the initial and foundational principles of integrationism. The issue of the reconcilability of Ecological Psychology and integrationism remains, therefore, unresolved and we do not intend to resolve it here. In our view, any such project of reconciliation would need to address the following problem areas:

1. Is the Ecological conception of 'direct perception' compatible with the integrationist rejection of material 'invariants' in communicational activity?
2. Is the integrationist's sign-making a type of 'perceptually guided action' in ecological terms?
3. Could integrationism abandon the retinal image fallacy and with it the reactive, physiological-reductionist perspective of 'stimuli' and 'passive registration' in favour of an idea of 'resonance' between living and acting persons and the world they inhabit and co-create?

As a parting shot, we might tentatively suggest some ways forward on these questions from our own perspective:

1. Ecological 'invariants', contrary to what an integrationist might assume, are not viewed as 'objective' or independently existing but as relative to—a function of—the organism's perceiving/acting in the world. 'Invariants' are therefore established through experience as the necessary basis or presupposition for particular types of perceptually guided action. Such an approach might facilitate bridging the two theoretical traditions.
2. Sign-making could be construed as perceptually guided action if integration is understood to take place over time, as perceiving/acting does for Gibson, as opposed to Harris's position that integration is 'of the moment' in relation to a 'past' and a 'future'. By the same token, the Ecological approach would have to drop any assumption that signs—in whatever modality—have (representational) 'content'.
3. Since Harris's adherence to the 'retinal image fallacy' could well be taken to be the weakest link in his whole chain of argument, dropping this commitment would seem to offer the most obvious path to closer convergence with Ecological Psychology, though the semiological implications of notions of 'resonance' and 'propagation' would need to be more carefully explored. More specifically, further rapprochement might be possible if the rather black-and-white distinction Harris makes between passively registered (non semiological) experiences (feeling warmth or, perhaps better, feeling pain) and those sensuous (semiological) discriminations tied to specific action programmes could be softened or bridged via Gibson's notion of 'education of attention'.

We hope that these questions and possible ways forward will be useful for current debates over the scope and power of the intellectual legacies of Gibson and Harris and will also help to clarify what is more fundamentally at stake in this discussion, namely our continuing attempt to recuperate the full humanity of perceptual and communicational powers from the ideological clutches of mechanistic, positivist and representational outlooks.

¹⁶ Our thanks to Mark Stott of Sheffield Hallam University for emphasising this point (personal communication).

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