

MAKING SENSE OF PICTURES

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SUMMARY

This article poses the basic question: how to make sense of the entire field of pictures, i.e. how to make order of the vast, apparently chaotic, range of depictions of all kinds? A taxonomy that might do this would have to be of a universalist sort, one not reliant on culture-specific premises currently in use in Art History and rock art studies. I suggest one way might be to base the taxonomy on (phenomenological/descriptive) analysis of visual perception which is at the same time aware of evolutionary imperatives. Accordingly I give the example of three perceptual situations with evolutionary import and with, in each case, their pictorial equivalents. Finally I refer to data supporting the argument from the disciplines of cognitive psychology and neurophysiology.

RIASSUNTO

L'articolo pone un interrogativo di fondo: come dare un senso all'intero campo delle immagini, ovvero come fare ordine nella vasta, e a quanto pare caotica, serie di raffigurazioni di ogni genere? Una tassonomia che potrebbe fare questo dovrebbe essere di tipo universalista, e non quella con legame specifico culturale attualmente in uso negli studi dell'arte storica e di arte rupestre. Un modo potrebbe essere quello di basare la tassonomia su analisi (fenomenologico-descrittiva) della percezione visiva, analisi che allo stesso tempo sia consapevole degli imperativi evolutivi. Qui si fornisce l'esempio di tre situazioni percettive con contesto evolutivo e con i loro equivalenti pittorici. A sostegno della tesi, infine, ci si avvale dei dati forniti dalle discipline della psicologia cognitiva e della neurofisiologia.

THE FIELD OF DEPICTION

Over a number of years a certain question has taken shape for me, viz how to find a way of making ordered sense of the entire field of depiction. This would be a way of talking about pictures ("art" understood neutrally, without recent-historical baggage) that is universal, in short, applicable to pictures independently of time/place constraints. Order requires categories, in this case a universally valid taxonomy. Since such a taxonomy would make no distinction between diverse forms of art, it would be as well to ground it in the earliest and most long-lasting art tradition known to us, with the requirement that it should have equal relevance to contemporary depictions. It is surely very strange that as things stand rock art scholars for the most part remain totally ignorant of art studied by art historians and critics, while art historians and critics for the most part remain totally ignorant of the vast field of rock art, whose time-depth alone must give it considerable theoretical priority in any art discourse. There are of course those who have tried to bridge the art/rock art divide: rock art scholars, such as Schaafsma (1980), who make notable use of stylistic analysis, or Clegg (1977), who sought to isolate elements in rock art motifs which might be tied to individual expression.

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With respect to Art History there is the inevitable token reference to Lascaux or, these days, Chauvet (one thinks of Gombrich (1972), with his wonderfully alienated early-chapter title "Strange Beginnings").

At the same time it must be said that Gombrich, while unable to fit rock art into his scheme, certainly had a broad thesis which might hope to offer some sort of structure for the field of art. This less in his view of art's history as a progress to mimesis, as in his use of empiricist psychology in the service of art criticism, and particularly the appeal, derived from the neuropsychologist Gregory, to a supposedly universally applicable idea of perceptual mis-perception which in turn translates into the notion of depiction as the making of illusions (GOMBRICH 1960). Another art theorist with a universalist thesis, this time reliant on Gestalt psychology, was Gombrich's major rival, Arnheim (1974). Neither Gombrich nor Arnheim made an effort to fit rock art into their respective schemes. Some rock art experts have also produced large syntheses with more or less universalist implications. Leroi-Gourhan took up the structuralist premise of meaning as emerging from the relations between things rather than from things themselves and applied it to European Palaeolithic art. The phosphene thesis, in the writing of Lewis-Williams, served a parallel universal function, not only as an elucidation of rock art but as an explanation for the origin of art—in the phenomenon of trance. I (and not I alone) am sceptical of key aspects of all the above attempts to order the field of depiction. I do not accept Gombrich's view of art as essentially illusion-making, or Arnheim's Gestalt view of art as tension-releasing. I doubt any Franco-Cantabrian cave actually follows the Leroi-Gourhan schema. Likewise, however sympathetic to Eliade-inspired research into worldwide hunter-gatherer spirituality, I do not believe in a trance origin for art.

A DIVIDED FIELD

But most work in art, and in rock art, does not aim at a grasp of the totality of the whole field of picture-making. Rock art scholarship is mostly practised as a branch of archaeology or, if the archaeologists are inclined to be generous, archaeology and anthropology (henceforth A&A). Now A&A-driven rock art work has given us one important basis for understanding the art. At the same time so long as we apply A&A principles to rock art study we will have difficulty in deriving universalist conclusions from them. This simply because A&A is primarily a historical discipline, i.e. it has the primary aim of historical reconstruction. Thus it documents motifs, styles, traditions as the product of cultures – material elaborated by particular groups at particular times. In the course of which key issues are decided by dating, if possible. It is hardly necessary to give examples of this widespread procedure, and I shall simply refer to Anati's virtual recreation of the otherwise lost society of the Camuni. Naturally I have no intention of criticizing historical studies, since they have been central to most academic disciplines for some two centuries and much of my own work has been of the historicist kind. Nonetheless historically-oriented approaches to rock art by their nature lay no claim to the wider sphere of art.

In fact, and with good intentions, rock art research, under the influence of empiricism, albeit of a more or less soft variety, tends towards theoretical minima-

lism. This has its admirable side, though unwillingness to theorize greatly limits analysis. I give the example of in my view insufficiently acknowledged cultural specificity. This matters in the present argument, since the aim of any universalist thesis must be precisely to avoid the modern-cultural assumptions which shape rock art classifications, i.e. current conceptual ordering of the field of rock art. When the A&A scholar records a site she is faced with the taxonomic imperative. Anxious to escape “subjective” judgements, i.e. to engage as much as possible the methodology of hard science, she will, for example, refuse precise identification of motifs in favour of a division like “zoomorph/anthropomorph/abstract”. In this simplest case she may also distinguish between images as either “naturalistic” or “schematic”, or “simple” or “complex”. Now it is unlikely that the hunter-gatherer or perhaps pastoral/agricultural people responsible for the art would have made distinctions of this sort. They may, for a start, have felt much closer affinity with non-human animals than does the present-day researcher. And of course the researcher knows this perfectly well, just as she knows the rock artists may not have been inclined to generalize either themselves as human or animals as animals. Would they have prioritized or even advanced such binaries as “naturalistic/schematic” or “simple/complex”, or notions of “abstraction”? Doubtless not. So self-evidently rock art taxonomies use concepts that are entirely modern. Does it matter, if the taxonomies do the job required of them? It does not, though this judgement cannot sit comfortably with the reconstruction paradigm premise that valid identification of motifs should be in line with the original intention of the rock artists—this being the broad ambition of all historicist studies (to know the past as far as possible in the way it knew itself: SCHLEIERMACHER 1977).

And what precisely might be the assumptions, obvious or not so obvious, which shape, for example, those binary divisions listed above? We divide ourselves off from other animals because, over a historical period, and against Darwinian evidence, we have come to think of ourselves as so superior as to form an altogether *sui generis* species. The notion of some motifs as “abstract” (when “abstract” implies something more than non-iconic/“don’t know what”) probably relates partly to a modern bias in favour of “abstract” thought—some seeking to dignify this as an actual evolutionary breakthrough in the form of a “Theoretic” modern mind following from a “Mythic” phase (Donald 1991). But it may also be that the idea of “abstract” images derives from nothing more than the early-twentieth-century art binary of “figurative/abstract”. “Naturalistic” purports to relate to an idea of “looking like things as they really are”. Leaving aside the fact that this statement generates philosophical minefields, there is the worrying sense that it also brings art-history baggage with it, coloured as it appears to be by the European post-Renaissance “realist” art which peaked in the nineteenth century and which provided suitable context for the invention of the camera. Gombrich was the great spokesperson for this elevation of mimesis as the goal of art in the twentieth century and his culturally limited views continue to have sway, not least in the discipline of rock art studies whose matter he cheerfully dismissed as “strange beginnings”. Finally, there is the “simple/complex” binary, which I would source to the post-Enlightenment thesis of historical progress. Contra Lévi-Strauss’ thoughtfully anthropological view that *la pensée sauvage* is the same as

modern thinking (but directed at the tackling of entirely different problems), we like to assume that the modern mind is complex and its predecessors simple—with value judgement inevitably included.

Clearly it would be naïve to demand radical revisions of rock art classifications as long as these do the practical job required of them and are accompanied by an awareness of cultural relativities. My point is simply that classifying rock art as we usually do has no logical connection with the avowed paradigm of reconstruction as recuperating the original intention of the makers of the art. Instead the obvious link is with what Gadamer (1993) called the horizon of the present. It makes no sense to advocate abandoning this contemporary standpoint, something which, on good Gadamerian grounds, must in any case be judged impossible. But it helps to see our discursive cultural specificity for what it is, even when, on reflection, no one is going to be surprised at this conclusion. At the same time, and returning to my own argument, it needs to be understood that, however productive, the historical paradigm cannot help with any universalist enterprise. Where the discipline of Art History generates period-bound categories (“Renaissance/Mannerist/Baroque”) or more or less period-bound ones (“landscape”, “portrait”, “still life”), the minimalist A&A approach to rock art generates working categories which aim at (timeless) objectivity but on small reflection turn out to be as period-bound as those in Art History, only less consciously so.

What art criticism might be better qualified to do than A&A—in the context of a universally applicable theory of depiction—relates to the area of formal analysis. It goes without saying that A&A, as much as art criticism, makes use of formal categories when dealing with rock art. Hence the use of Art-Historical terminology in rock art discourse (“motif”, “style”). Art History at the same time has at its disposal highly sophisticated formal categories of the sort listed by Arnheim (1974): “balance”, “shape”, “form”, “space”, “light”, “colour”, “movement”, “dynamism”, “expression”. And some at least of these may be applicable to all depiction and may therefore provide a basis for understanding the entire field of pictures. Be that as it may, I do not intend to pursue this potentially useful line of enquiry here. At this point let us assume, in preliminary fashion, that (a) there might be value in attempting to delineate ordering principles for the whole field of depiction, and that (b) there is in any case something awkward and unsatisfactory about the disciplinary and conceptual division of art studies and rock art studies.

VISUAL PERCEPTION AND EVOLUTION

And might not this division be just one aspect of the problem? After all, the foregoing discussion has limited itself to pictures, pictures on rocks and pictures on any other support. But whether in the making or the observing, pictures generate situations within larger situational contexts. Putting it another way: an attempt to focus on the entire depictive field requires not merely the bringing together of art and rock art studies but also the placing of depiction in the context of life-situations. But precisely which life-situations? I suggest that a starting point might be life-situations structured, not by historical considerations, which necessarily rule themselves out here, but by evolution. In saying this, I do not envisage yet another investigation into the “origin of art”. Rather I have in mind something

different and which has not been done before, either by rock art scholars or art critics—or anyone else. It would be a taxonomy for pictures, one universally valid because based on evolutionary thinking.

Of course I am far from being the first to want to set art in the context of evolution. Others have done so, though not in terms of the kind I propose. In the area of aesthetics, something I am not concerned with here, Dissanayake (1988, 1992), Dutton (2009) and Thornhill (2010) come to mind. With regard to the phosphene hypothesis and with specific reference to rock art, there are Bednarik (1984) and Hodgson (2000), among others. Solso (1994), writing about art, has appealed in a general way to the survival value of sight. And Onians (2007), in what should have been an informative history of biological commentary on art, came up with a rather simplistic interpretation of personal experience as shaping the biology of commentators from A to Z (Aristotle to Zeki!). I shall return to some of these, focussing here on my particular appeal to evolution, which takes the standpoint of visual perception operating in specifically survival situations, then depictive contexts. What I have to say does not bear on the evolution of perception, however, given that neither rock art nor any other kind can have a time depth sufficient for evolutionary processes. That is to say, the human visual system has remained relatively stable for a period much longer than any possible genealogy of art.

Here, however, we may expect to hear a common objection from rock art scholars: how do we know that we, in the present, see in the same way as ancient artists? This is an objection rich in confusion. For a start it is evident that if by “seeing” we mean understanding the meaning of an image, then it goes without saying that we do not, in all likelihood, see art from times remote from ours in the same way as did the makers. This applies equally to place, i.e. cultures remote from our own. Culture-specific meaning, say of the symbolic kind, is probably largely or wholly unavailable to the modern observer—unless she has relevant anthropological/ethnographic information. And even then it may be said that the modern observer can at best roughly approximate original meaning—or the original intention of the artists, i.e. what was on their minds when they made the art. But my concern is not with this; it is with the biology of vision. Still, it may be objected: has not biology altered in the course of time? The first reply to this argument must be to point out its absurdity in the present discussion: if we postulate that vision itself has changed in the time span of the phenomenon of rock art, then nothing at all can be said about rock art and, as a class, rock art researchers are out of business. You cannot say that ancient artists may have seen a square where we see a circle without making nonsense of the entire enterprise of studying rock art.

There is, though, a further point which settles the matter once and for all. Neuroscientists working on the structures of the visual system for a time depended on monkeys, which were sacrificed in the course of experiment. When fMRI scans permitted non-invasive examination of the brain, experiment shifted to human subjects. Critically, it was found that the human visual system is homologously similar to that of the monkey and that the neural mapping carried out on monkeys applied to humans too. We have been separate from Old World monkeys for c. 20 million years. It follows that the human visual system has remained more or



Fig. 1 - Mt. Borradaile, Arnhem Land, Australia.

less constant in that time. This means that the objection that ancient artists may not have seen—literally seen—the world and their art as we do has no foundation.

PERCEPTUAL SITUATIONS

In summary so far: I would like to suggest one possible way of making sense of the range of depictions by the analysis of perceptual situations with evident evolutionary import—and this in situations independent of art and in situations involving art. The aim being to find depictive equivalents of more evidently survival situations, so as to order the field of depictions on the phenomenologically and scientifically sound basis of visual perception. “Phenomenologically” because, whatever else we do with art, we start by looking at it, and it is the serious task of commentators to scrutinize the character of that looking. “Scientifically” because nothing prevents me from marshalling other forces, in the form of scientific experiment, to assist me, as I shall argue below. I intend to examine three examples of the kind of situation I have in mind. First, however, it should be noted that perception of an object or objects in the world is not an additive, piece-by-piece process. If it were, it would be too cumbersome for survival. Instead the visual system, building on millions of years of adaptation, takes short cuts, referring to already as it were pre-packaged combinations, i.e. complex pre-existing hardwiring. Thus, and especially where the question of survival is acute, we may expect the most complicated perceptual outcomes to have been pre-set so as to come into automatic operation.

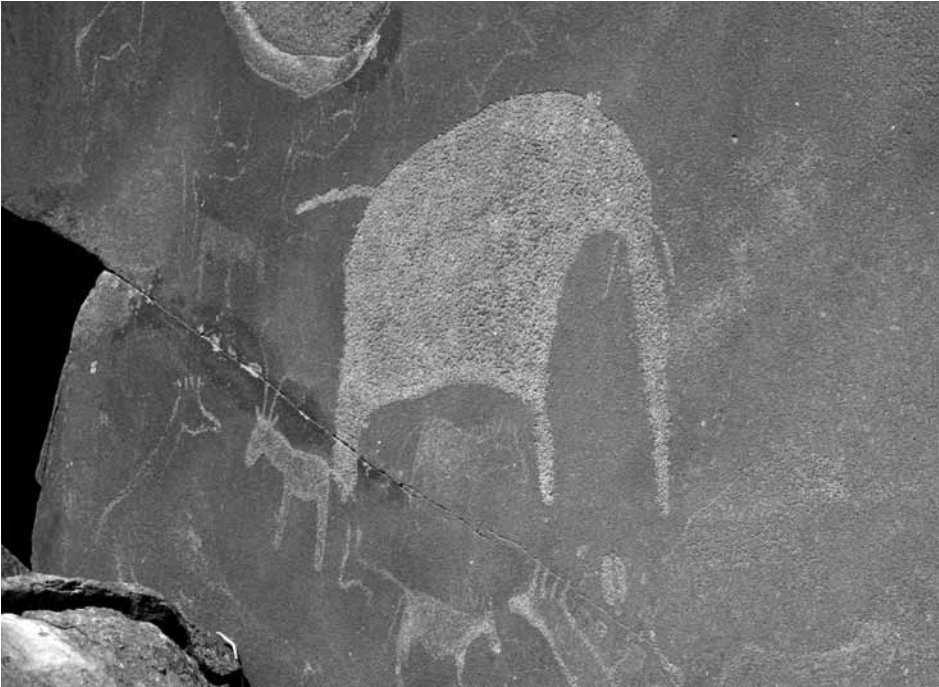


Fig. 2 - Twyfelfontein, Namibia.

CANONICAL FORM

With this in mind I turn to the three perceptual situations, each of which may plausibly be said to have worldwide depictive equivalents. Surprisingly these have not been identified as such. The first is that of “recognition” (Fig. 1 and 2). In collaboration with Patricia Dobrez (DOBREZ, DOBREZ 2012, 2013a, 2013b) I have given an account of it with particular reference to non-human animals, pointing out the necessity for easy and rapid identification of something the observer may wish to hunt or, alternatively, which might hunt the observer. The easiest and quickest recognition will (generally) take place when the animal is viewed in profile, at which point its salient feature, often though not always the cervico-dorsal line, is most in evidence. Patricia Dobrez and I termed this best-view “canonical form”, connecting it to studies in cognitive psychology and to the issue of seeing part-for-whole via the phenomenon of salience, as well as to neural substrates for the operation. This with both real and depicted animals, because it was not difficult to find immense data from rock art representations, where the profile animal is ubiquitous, and illustrations of all kinds, to demonstrate our point: that recognition of a depicted animal calls for the same perceptual operation as recognition of an animal in real life. Accordingly we isolated one plausible perceptual universal, valid across the art/rock art divide, as well as across the divide between a real-life situation with significant evolutionary implications and its pictured equivalent.



Fig. 3 - Barnes' Shelter, Giant's Castle, South Africa.



Fig. 4 - Toca do Perna IV, Serra da Capivara, Brazil.

THE SCENE

A second perceptual situation is the one loosely alluded to when rock art scholars talk about a "scene" (Fig. 3 and 4), a term equally familiar in art criticism, not to mention theatre and film—but in each case left unanalysed. I have sought to give more rigorous definitions of scenes, with primary though not sole referen-

ce to rock art, particularly in a longish online article on depicted motion (DOBREZ 2007, 2008, 2010a, 2010b, 2010-11, 2011a, 2011b, 2013, 2015a, 2015b). My simple starting point for the definition of a scene was that it told a story, hence my term for it: a Narrative. So it was a depicted event, an action, "something going on". I was not interested in the content of the scene, what was "going on", that being a matter for culture-specific or historical investigation. What a universal category required was merely that the observer should register "something happening". Clearly this registering would have survival value in real situations, since an event can never be just a neutral thing. Indeed the perception of an event may well be at least as critical for survival as, or more critical than, perceptual identification of a given animal. Unsurprisingly, as with the first perceptual situation, this one is ubiquitous in art. Depicted Narratives are as common in all forms of art, ancient and modern, as depicted Canonicals.

In the past I have tended to characterize markers of an event in a picture, i.e. those formal properties which prompt the observer to read "that something is happening" in the picture, primarily as markers of movement. And this remains valid, with the understanding that depicted movement may be minimal as well as maximal—and sometimes, necessarily, ambiguous or borderline, this being often the case with rock art. In all cases, though, and in line with my phenomenological preference for the analysis of observation rather than historical investigation (the investigation of original intention), I could focus on a plausible, evolution-driven universal, both in life and art. Some of the formal markers outlined in various articles were (a) imbalance or asymmetry in a given figure (e.g. angled limbs indicative of movement), as well as larger compositional asymmetries (e.g. diagonal compositions suggestive of dynamic activity, like those of southern Africa and the Spanish Levant) (b) figural orientation (especially relevant with interactive scenes) (c) optimal distance between figures involved in actions (neither too great nor too small for interaction) (d) size of figures (smaller figures being the norm for scenes) (e) profile depiction (also relevant for interaction). It seemed to me that perhaps the key perceptual factor for the determination of a scene was the generation of imagined, dynamic space, such spatial generation being essential for the registering of depicted motion. Thus space contraction in front of a running figure and space expansion behind the figure would be required for us to see the runner as running. Interestingly the eye, or rather the brain, can make attentional "switches" which, for example, "freeze" depicted motion. I can stop the runner, if I wish. But given the kinds of markers listed above, it will be *easier* to allow the figure to be seen as moving. So formal markers influence but cannot force perception—and in this depiction differs from life. A still more important aspect of the generation of imagined space, however, relates to the basic fact that it *excludes* the observer. It is essential to a scene that, observing it *as* a scene, I cannot enter its space, i.e. join the action. If I do—and one thinks here of the breaking of the so-called "fourth wall" in a play or film when an actor directly addresses the audience—the scene collapses. It ceases to be a scene and becomes a quite different situation, which I shall outline below. In terms of the hypothesized evolutionary situation, the scene obtains when I am "looking on" but not engaging the object of perception.

Some final comments on the nature of a narrative depiction. With respect to its depiction of motion I have made considerable use of cognitive psychology (JOHANSSON 1973; FREYD 1983, 1987) and, most particularly in connection with interactive scenes, i.e. scenes involving more than one figure, I have appealed to the experiments of Michotte (1963), which established that we not only see (i.e. actually see, rather than infer) depicted motion, as convincingly argued by Freyd: we actually see *causality*. In the end this has seemed to me the final element constitutive of scenes involving interactive figures, i.e. figures “doing something” either together or in some other relation to each other. At the same time there is a role for what we may term contextual (as well as textual or formal) markers for scenes: (a) approach and visibility (b) placing (on its support, e.g. high or low on a wall) (c) optimal viewpoint. In most cases, from rock art to Italian Renaissance frescoes to comics and graphic novels, a narrative will be perceived more or less at eye level and in closeup. With rock art this is because the figures are likely to be small, in marked contrast to “canonical” representations such as those of Palaeolithic Franco-Cantabria, as well as other representations yet to be discussed. Naturally this rule for narrative-figure size may be stretched. Goya’s “El Tres de Mayo” scene of an execution at the hands of Napoleonic forces, and Picasso’s “Guernica” (for a time strikingly exhibited face to face at the Reina Sofia museum, Madrid), still register as scenes, though they are large for paintings. The same is true for Michelangelo’s panels in the Sistine Chapel, especially the very large Last Judgement behind the altar. At the same time most of Michelangelo’s scenes in the Sistine Chapel are high above the viewer, like those Baroque ceilings featuring the ankles of angels and saints. In these last cases the rule for scenes is deliberately and outrageously broken, in line with Post-Reformation church propaganda. But it still works, as indeed propaganda must. Of course a scene in a film is also projected on a large screen. But there should be a visual perceptual limit in all this—and I return to the enormous body of world rock art as a touchstone for any discussion of pictures.

Two concluding remarks on scenes. The first is that a scene is not to be confused with a particular period rendering of it, e.g. post-Renaissance realism. While recent European art features a great many scenes (think of those blockbusters by Gros, Lejeune and Vernet produced to glorify Napoleon’s battles), and while recent European art is at the same time “realist”, a narrative scene may, and especially in rock art *does*, exist without post-Renaissance perspective, $\frac{3}{4}$ profile and foreshortening. The second remark answers the question: just what formal, and contextual, markers are required and in what proportion in order to constitute a depicted scene? The fact is that some markers are more important than others, and where some are absent, others will step in to do the job. It is of course a matter of perceptual judgement, regarding which there need not always be agreement, though there should be agreement in principle. In general markers work in complex combination, such that it may not be so easy to judge which might be dispensed with and which not. It may even be, for example, that a single strong marker suffices in the absence of all the rest. It may also be that a figure merely standing or sitting in a rock art composition is read as “doing something”, say for reasons of context, e.g. that the figure seems to be part of a “ceremony” or

“dance”. In more recent art, such figures are readily taken as participating in action because we understand the context of the picture (a woman reading a letter, a man and woman at the piano etc.). For the most part, however, some degree of depicted movement is essential to a scene, i.e. some compositional asymmetry, along with profile depiction (without which pictured figures cannot interact), and the consequent exclusion of the non-participant observer.

THE PHENOMENON OF LOOMING

But what if the perceiver of the scene becomes a participant? This might happen if, observing two groups exchanging spears, I suddenly become the target of their spears. Or if the elephant I am observing turns on me and charges. Obviously in comparison with the two situations discussed above this one is by far the most critical for survival. So it might be expected to have a class of pictures corresponding to it which are perceived with special force. This is indeed the case, and it brings me to the third depictive situation, also common in art of all kinds from rock art to comics to 3D movies (Fig. 5 and 6). Perceptual psychologists refer to it as the phenomenon of “looming”. I have elsewhere commented on this at length (DOBREZ 2007, 2008, 2010a, 2010-11, 2012, 2013, 2015b), not least because, whereas the category of the scene is perfectly well known though poorly analysed, this depictive category has not been noticed at all. Once pointed out, it seems overwhelmingly evident. What is “looming”?

Gibson (1979) notes that if a form (it may simply be a shadowy blob projected on a screen), increases in size, subjects perceive it not as larger but as coming *closer*. In the sphere of art, images cannot grow in size (usually), but an equivalent of looming is nonetheless possible. Looming images do not generate imagined, i.e. representational space. They do not exclude the observer. Instead they are perceived as confronting the observer, in a way that may be threatening or at least dominating, i.e. as in a manner entering the observer’s own space, in short, *real* rather than representational space. If there are a number of them they do not interact among themselves: in this sense they are not “doing” anything and may in some cases be read as static. In fact they are extremely active and this because they engage *us*, *outside* the picture. So they exhibit a type of depicted motion, but one that is of a very special kind. Freyd and Finke (1984), experimenting with perception of movement in still images, pinpointed what they termed “representational momentum” (RM), i.e. the actual motion of stills registered by the brain. But Kelly and Freyd (1987) also found RM effects in looming stills. So there is experimental as well as observational evidence that looming figures are perceived as being in motion. The looming figure exists in great profusion in every sort of picture from rock art to contemporary graphics, and is of course especially exploited in the 3D movie. Its markers are best understood as complementary opposites of those for a scene. Thus they are frontals, not profiles. They tend to symmetry rather than asymmetry. Details that matter in this type of figure are the face and especially the eyes which naturally are directed at you, the viewer. It follows that looming depictions and scenes are mutually incompatible. If there is an attempt to combine them, the brain is required to switch from seeing a scene to seeing a looming image, and back again. Other things being equal, the phenomenon of



Fig. 5 - McKee Spring, Vernal, Utah, USA.

looming will be dominant, and for good evolutionary reasons. In the past I have illustrated this with pictures by Manet such as the “Déjeuner sur l’Herbe” and the “Olympia”. In each case here we may see a scene: two men picnicking with a naked female; a naked prostitute being offered a bunch of flowers by her servant. However, also in each case, the nude fixes *us*, the viewers, with her gaze. At once the scene recedes and a confrontation ensues: the viewer has walked into the space of the picnic; the viewer has become disconcertingly identified with the customer who brought the prostitute flowers. Or, more correctly, the two nudes, through their gaze alone, have stepped out of the representational space of their scene to directly engage the viewer-in the viewer’s space.

Following the idea of “performative statements” which *do* what they *say* (as when one says “I do” at the marriage ceremony) I have termed looming depictions Performatives and proposed them as a third perceptual/representational category which may be taken as universal, following Canonicals and scenes or Narratives. Performatives, unlike images in scenes, tend to be large. In rock art they may be visible at a distance and placed such that optimal viewpoint is from below, all of which enhances their dominance. In Australia they come as Wandjinas or frontals from Cape York or frontal petroglyphs from the Sydney area. In Europe they are found less evidently, but may be identified as “Thor” or “Odin” in Sweden, or “Cernunnos” at Valcamonica. In the Americas they are found in

Piauí, Brazil, and in the USA from the Pecos to Utah (Barrier and Vernal style) and Wyoming (Dinwoody style). So it is extremely odd that no one has thought of looming figures in art as an evident visual/representational category with equally evident evolutionary import. Performatives again and again feature in religious ikons, from Byzantine Pantocrators to Hindu deities to Buddha images (some very large indeed). But the category is not to be restricted to the religious and in the past I have illustrated it with Parmigianino's "Self-Portrait in a Convex Mirror" (at the Vienna Kunsthistorisches museum), Kitchener's "Your Country Needs You!" enlistment poster for WWI etc. Two further points regarding Performatives. In some cases a depicted full-frontal face will generate the looming effect on its own, and a rock art example would be Hueco Tanks, Texas. A full-frontal *headless* body, as sometimes seen on the Pecos, will do the job. Even a pair of eyes painted on the wall of a stupa tower, as at Svayambhu, Nepal, suffices. So the combination of markers will vary, usually with eyes, when present, as dominant. But frontality and size would seem important also. On the second point: a handprint or stencil in rock art or a hand image at traffic lights should also be included in the category of looming images. At the lights it may engage you as directly as a STOP! sign. For its use in rock art I refer the reader to detailed analysis carried out by Patricia Dobrez.

As it happens there are other likely candidates for inclusion in the above scheme. In addition to hand images, and also tracks, both discussed by Patricia Dobrez



Fig. 6 - Milbrodale, New South Wales , Australia

(2013, 2015), there is the category of rock art images loosely labelled “abstracts”. However, space does not permit the inclusion of any of these in the present article. Three examples must suffice to make the point that there are types of pictures with (a) worldwide distribution and (b) the time-depth that accompanies rock art which plausibly claim universality, not least when considered in the light of evolution. So we have here a taxonomy for pictures which is not culture-specific but relies on the fact of perceptual constancy over evolutionary time. Accordingly this taxonomy applies to both the currently discrete fields of Art History and rock art studies and, more importantly still, it relates depicted situations to extra-pictorial or real-life situations. Because it is grounded in perception, it is not arbitrary, like the working hypotheses used in current rock art work, or the historically contingent categorizations which, over time, have emerged in Art History as ad hoc *bricolage*.

SCIENTIFIC EVIDENCE

I have noted above that experiments in cognitive (and other forms of) psychology are readily available to supplement the argument for depictive universals. What about the startling developments of the last few decades in neurophysiology? In this connection it is worth recalling that the perceptual responses of interest to me, i.e. responses to recognition situations, to scenes, and to looming situations, are all of them entirely automatic. You do not stop to *think* that what you see is a diagnostic cervico-dorsal line, or a scene, or something advancing towards you. Though memory has a role in the formation of the percept, inference does not. That suggests the hardwired, “pre-packaged” nature of the perceptual situation in question. And in fact investigation of the neurophysiology of the visual system on the whole gratifyingly confirms the thesis I have advanced above. For details I refer to previously published material cited above (especially DOBREZ 2013), but a couple of relevant points should be made here. In terms of the present thesis a critical scientific finding is that there are very specific neural processing areas for aspects of the image-types I have defined. The inferior temporal lobe (at the side and back of the head) processes object-perception, terminally at an area known as TE. This would be the endpoint at which we register, for example, canonical animal profiles, possibly by feed-forward mechanisms that might explain the mechanics of the *pars pro toto* principle operative in the recognition of a mammoth by its characteristic cervico-dorsal (often sufficient for its depiction in Franco-Cantabrian art). With scenes, on the other hand, we must prioritize the processing of depicted motion, as well as the organization of spatial relations (predominantly in an area known as V5, in the superior temporal). With looming figures different neural pathways, involving V5 in the superior temporal and relevant areas—the Fusiform Face/Body Area—in the inferior, should work together to process both motion and those elements of Performatives which stand out as especially important: faces and eyes.

Now processing of visuals involves two separate neural paths, the “dorsal” and “ventral”, adapted respectively to motion-processing and object-processing—these being the pathways which would come into operation in any situation (both scenes and looming situations) involving perception of objects-in-motion. Im-

portantly, the fact that the ventral stream is slower than the dorsal means that we see the movement of things before we see the things themselves, something anticipated by Gibson and illustrated in perceptual experiments by Johansson. In terms of my thesis it means that we may expect a canonical animal profile to be depicted as static, and figures in a scene as active, which is indeed the case. We may also expect a more generally dynamic depiction of a scene, which is also the case, as evidenced by the scene-markers listed above. Looming figures are a more difficult case, there being to my knowledge no specific neuroscientific investigation of frontal movement or movement towards the observer. At the same time there is evidence for a strong response generated by the face, especially the human face. So I would predict that looming images should generate the most urgent neural response of all.

A finding which emerges from neurophysiological research is of special significance for my argument. It seems that real *and* depicted objects, as well as real *and* represented movement, register in the *same* neural areas. Even more significant: there are individual neurons which will fire for *both* real and represented motion, i.e. some neurons make *no* distinction between a real movement and a picture of movement. That of course supports the contention that we see real and represented in the same way, though naturally we do not confuse the two (since the visual information supplied to the brain in each case is not quite the same). Still, all this lends credibility to the thesis that a real perceptual situation does indeed have very precise equivalents in art. The appeal to neurophysiology, which has more and more concerned me in recent research, has been immensely helpful because it has given weight to the initial premise, viz that if phenomenological analysis of perception is accurate we should expect neural substrates to corroborate observation. And this has been the case.

In saying this, however, I stress that I regard information about neural substrates for perception as complementing observation, not “explaining” it. Neurophysiology simply offers a “bottom-up” perspective to complement the “top-down” experiential perspective of everyday observation. There is naïveté on this issue, both in scientists who assume the superiority of their experimental conclusions over any other form of investigation, and in non-scientists who are dazzled by the brain-mapping of recent years. I am happy to be somewhat dazzled myself. But I remain sceptical of the notion, held by some in rock art studies, that brain processes are *sufficient* to account for, e.g. phosphene-type images. Of the scientists who have shown interest in art (unfortunately not rock art), such as Zeki (1999), Ramachandran (1999) and Livingstone (2002), all three of whom make highly informative reading, Zeki and Ramachandran at least take the easy option of assuming that what they have to say amounts to an “explanation” of whatever art phenomenon they are discussing. I do not say they do this without some attempt at reflexivity, in Zeki’s case with a disarming admission of his limited knowledge of art, and in Ramachandran’s with cavalier charm and enthusiasm for the art he appreciates most, viz the (admittedly wonderful) female sculptures of India. It is Onians (2007), not a scientist, who seems to me to put the idea of a final scientific explanation for art least analytically, with the strange argument that the brain “manipulates” the subject-strange because I take the brain to be

me, not an alien inhabiting me, even if its (for present purposes) visual structures were laid down long before I came on the scene. But I mention this example because the idea of neural structures as not merely “explaining” but as actually controlling human behaviour, including art-behaviour, is common enough—and could doubtless be extracted from the writings of many scientists and fellow-travellers keen to make use of science in their work. As it happens I might count myself as being in the fellow-traveller group, though with the intention of wherever possible reconciling diverse disciplines, rather than proposing the superiority of some over others. If I have been brief on science in this article it is because I have given it more space in others, and if I have I make no more than passing reference to scientists who have shown sustained interest in art, it is because my take on art is of a very particular kind.

However, a final point should return this argument to the beginning, viz the discussion of a still-dominant historicism, both in Art History and rock art research. Does the emphasis on universalist perspectives on depiction, whether through phenomenology, or evolutionary thinking, or perceptual psychology, or neurophysiology, translate into a case for *replacing* historicism as a guiding principle in the study of art? I do not think so. As with the equally pressing Humanities/science issue, we are not talking about competing studies, but studies which can, indeed, *had better* operate to complement each other.

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