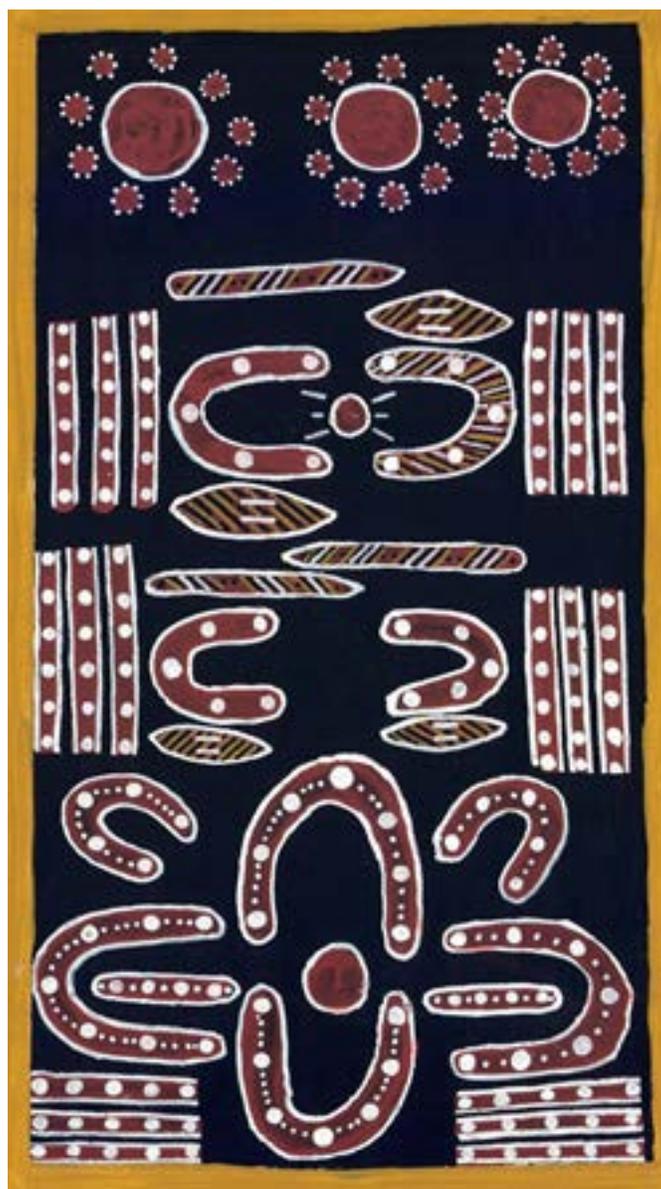


EXPRESSION

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MEANING OF ABSTRACT SIGNS?

People are sitting around waterholes, with spears and shields.

Australian Aboriginal painting, acrylic on canvas, cm. 30x 52 (by Judda, ca. 1990).

IN PICTURE GENESIS, THE ABSTRACT PRECEDES AND ENABLES DEPICTION AND CODING: SOME ARGUMENTS AND SPECULATIONS BASED ON THE INVESTIGATION OF EARLY PICTURES IN ONTOGENY

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Introduction

Questioning early manifestations of pictorial art in phylogeny, the elucidation of the abstract – above all, its time of appearance, its first characteristics and development, and its pictorial status – may prove to deliver some of the most important contributions to the understanding of why and how pictorial art emerged (on the general matter of the origins of art, see Lorblanchet, 1999; D’Errico et al., 2003; Anati, 2003, 2014).

However, in this paper, neither early art development in prehistory nor abstract manifestations in tribal art are directly addressed. In terms of a detour, general findings concerning early pictures in ontogeny (often termed early child art) are presented here, and they are interpreted with regard to the early abstract of pictures in general. The considerations are based on a long-term and comprehensive investigation of drawings and paintings of children aged between around one and six years old, including very different geographical, social and cultural contexts of picture production, and the investigation of the early picture process in ontogeny (Maurer and Riboni, 2010; Maurer et al.,

2013; Maurer, n.d.). Further, they also integrate and advance earlier reflections on the matter (Maurer, Riboni and Gujer, 2009a, 2009b; Maurer, 2013).

A direct comparison of early graphic expressions in ontogeny and phylogeny is confronted with two major obstacles. On the one hand, with rare exceptions, there is no archaeological record for the time of early pictures. The prehistoric pictures from about 40,000 to 10,000 BCE that have been discovered up to the present reflect a highly developed artistic level of drawing and painting abilities and, therefore, cannot be regarded as early graphic expressions. For the period of c. 500,000–40,000 to BCE, we only know of singular manifestations with graphic characteristics – in general, they are of the abstract kind – and the status and the significance of some of these manifestations are a matter of debate (Lorblanchet, 1999; Henshilwood et al., 2002; D’Errico et al., 2003; Joordens et al., 2014). For a phylogenetic investigation, we are thus lacking a concrete foundation of early pictures. On the other hand, different descriptions of the characteristics and the development of early drawings and paintings produced by children are given in the literature, related to different interpretations of their pictorial status (Maurer, 2013). In addition, it is not possible to directly compare characteristics and developmental tendencies of graphic expressions produced by adults and children because of obvious differences in production conditions, above all sensomotoric and cognitive skills and cultural encoding.

However, at least the second obstacle is surmountable. Because of our new empirical basis, we take the stand that this new basis allows for clarifications of early pictures in ontogeny, especially for their first characteristic as abstract, their first pictorial status as self-referred.

and their role in enabling depiction and codes. The aim of the present contribution is to explain in more detail these three characteristics and to discuss the role they play for the conceptual consideration of early pictures in general, also including phylogeny.

Early pictures in ontogeny: empirical findings

It is often assumed that the first characteristics as well as the first development of drawing and painting in early childhood consists of sensomotoric traces and marks (hence termed scribbles) and that only when the first figurative manifestations appear can there be a production of graphic forms that do not reflect the sensomotoric apparatus. This view corresponds to a structuralistic understanding of syntactic differentiations imperatively related to semantic differentiations, in which the syntactic manifestation, here the picture, stands for something other than itself, here the depicted (figure, object, scene, event) or a signification related to a code. Yet a comprehensive empirical investigation of early drawings and paintings of children contradicts such a view (Maurer et al., 2009a; Maurer and Riboni, 2010). The following summary provides an explanation. (Note that an extensive illustration is given online; please refer to <http://www.early-pictures.ch/expression>).

Already the very first characteristics of observable manifestations on paper – and also of corresponding manifestations on other flat surfaces – during the second year of life reveal the creation of types of graphic movements according to their visual contrast. Thus, children at this early age do not produce simple and accidental sensomotoric traces or marks, but they begin to act according to the visual appearance, its formal understanding and its formal differentiation. From the beginning, it is the visual understanding of a graphic figure (the term

used here in its broad sense) on a ground, and not the general understanding of a trace on a surface that makes the picture (see also Böhm, 1994, for the '*ikonische Differenz*' engendering a figure-ground contrast as the primary character of a picture).

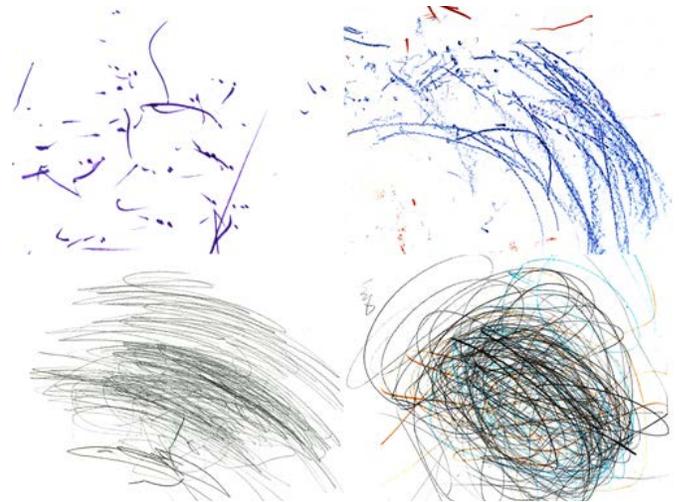


Figure 1. Four types of graphic movements according to their visual contrast: strikes, strokes, perpendicular or push-pull movements, circling movements. Three European children and one Indian child, age range = 1y 0m to 2y 0m.

Because this is what children do, they rapidly advance in this formal production and understanding. In the same year, they overcome or get rid of the rhythmic character of their arm motor function : they slow down the movement and try to lead the pencil during the graphic action, until a single line appears. As they progressively succeed in doing so, they differentiate the course of the line by creating different line forms. At the same time, they start to vary some attributes of the graphic manifestations, such as the size and extension of graphic movements. They also start to link different line forms. Further, they start to organize single graphic manifestations into simple types of topological arrangements, such as scattered, overlaid or forming angles.

Finally, they also relate to the visual effect of the colour, for example by producing multiple contrasts or by emphasizing a specific colour in terms of a very dense application.

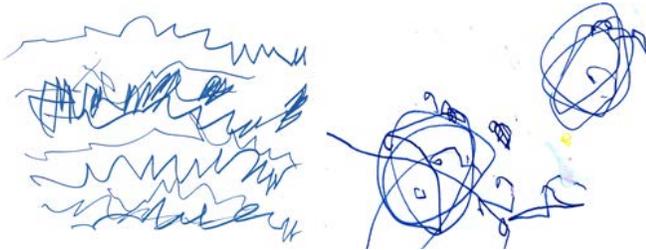


Figure 2. Two distinct line forms: zig-zag and spiral. Two European children, age = 1y9m and 1y5m.

Experiencing line formations, from the age of two onwards, children discover how to bring the end of the line to its beginning, thus producing a closed form. Succeeding in doing so, in the third and fourth year of life, they progressively become able to produce and differentiate various kinds of closed forms, such as circles, ovals, trapezoids, rectangles, squares, triangles, polygons and so on. At the same time, the variety of graphic manifestations, both drawing and painterly, sharply increases. Forms are further varied, they are composed in very different ways in order to appear as graphic combinations, complexes, structures, patterns and aggregates; they include geometrical aspects such as radiuses and diagonals, they are arranged in very different ways, such as overlapping, abutting, adjacent, inside one another, with a gap, reciprocally aligned, arranged in a series, or as parallels, or orthogonally, or concentric, mirroring a symmetry, showing distinct proportions and so on. Colour application includes variation in line density and thickness width, and effects of circumscribed surfaces and colour relations are produced.

.In the fourth and fifth year of life, this graphic evolution culminates in a first abstract picture scheme, in which individual graphic aspects

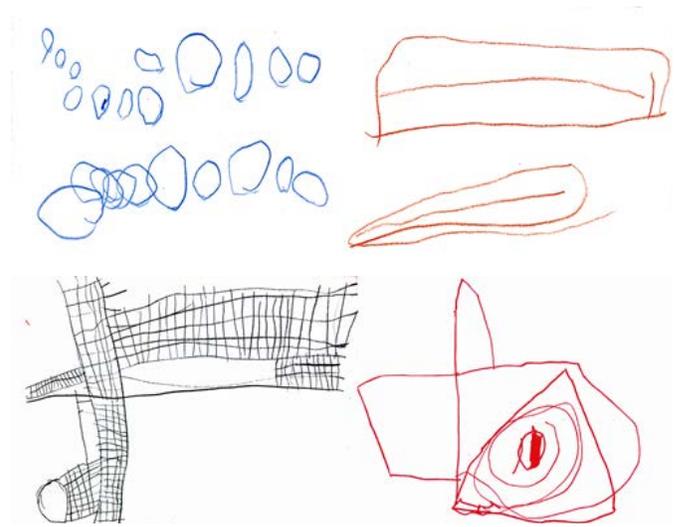


Figure 3. Closed forms and form compositions. 3a: Early closed forms and their differentiation. Two pictures of an Indonesian child, age = 2y 5m. - 3b: Two form compositions. Pictures of an Indonesian (up) and a European child (down), age = 4y 1m and 3y 6m.

are subordinated to a visual effect of the entire surface of the picture. In parallel, in the third and fourth year of life, children sometimes make verbal statements about their drawings and paintings with regard to either the



Figure 4. Four examples of an early „abstract“ picture scheme, in which individual graphic aspects are subordinated to a visual effect of the entire surface of the picture. Pictures of four European children, age range = 3y 4m to 4y 5m.

graphic itself (as the intention or appearance of a form or a form configuration), or a depiction or another type of reference. However, verbal expressions of this kind are very complex: some may be acoustically or verbally incomprehensible, or only partly intelligible, others are clearly understandable; some statements are inconsistent (changes of opinions during or after the drawing), others are consistent; some refer to representations that are not recognizable (adults cannot recognize the denoted), some are intelligible only by having attended the drawing process or through closer acquaintance with the child, others are intelligible at once; some are lengthy and complex, others are short and simple; and so on.

In this course of development, part of the described graphic forms, compositions, arrangements and colouring are brought into the service of an analogy formation in terms of a depiction attempt of figures, objects, scenes and events, or of an analogy to actions. However, in their turn, these analogy formations are again of a complex kind: some only concern an analogy of single graphic attributes with single attributes of the denoted, others concern different forms and multiple types of arrangements; some are only intelligible by taking into account the child's comments, some need the knowledge of the context of the picture production, others are clearly recognizable visual-

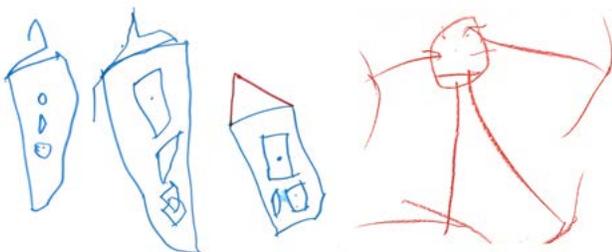


Figure 5. Two early analogy formations which are visually recognisable. European children, age = 3y 0m and 2y 10m.

ly; and so on. Further, first attempts at drawing characters emerge. During the fourth, fifth or sixth year of life, the development of analogy formation often engenders a figurative picture scheme,, in which individual analogies are subordinated to an overall analogical picture effect of the entire picture plane.



Figure 6. Two examples of an early figurative picture scheme, in which individual analogies are subordinated to an overall analogical picture effect of the entire picture plane. European children, age = 5y 9m and 4y 1m.

subordinated to an overall analogical picture effect of the entire picture plane. Subsequently, depiction establishes a schematic structure both in terms of the production process and the syntactic structure of pictures, characterized by elementarization, model building and repetition: abstract graphic forms, few in number, and a limited set of types of combinations, arrangements and colouring are used for an extensive number of different depictions; simple models are used for analogy formations; elements and models are repeated over longer time periods with no or only small variations.



Figure 7. Two drawings of houses illustrating the schematic structure of early depiction. Pictures of a European (left) and an Indian child, age = 5y 7m and 5y 0m.

The abstract precedes and enables depiction and coding of graphic expressions

On the basis of such findings about early picture development in ontogeny, we assume that the abstract must precede depiction and graphic codes structurally and temporally, not only in ontogeny, but in early picture genesis as such. We also assume that the abstract is not subsequently superseded by depiction or coding, but it is continuously evolving either inherently in the latter or independently from it. The following arguments support this thesis. Pictures are products, which means that certain skills are required to create them. Skills have to be learned, and learning proceeds from the simple to the difficult and from limited to diverse productions. The first graphic manifestations, the most simple ones, must be abstract, because graphic formal differentiations are needed for any depiction or code: depictions and codes rely on the ability and consciousness of syntactic differentiation which must already previously have achieved a certain level: How could an individual produce an analogy between graphic form configurations and a percept of the visual world, or a visual imagination, without a consciousness of graphic differentiation as such and without an already developed set of types of forms and their arrangement? No visually recognizable early drawing of a house can be produced without understanding the difference between a straight and a curved line and their arrangements; no visually recognizable early human figure drawing can be produced without, again, understanding the difference between a straight and a curved line, graphic arrangements such as inside-outside, tangent-adjacent and possibly open-closed. And so on. The same applies to establishing a code between graphic form configurations and any mental concept not directly related to the graphic as such.

It is important to consider that the formal understanding of very early graphic forms, compositions, arrangements and colour effects cannot be derived from looking at the outer world, because such a derivation would need highly developed conceptual abilities and skills of realization. The development of very early abstract pictures is not a result of a copying process related to the visual experience of the outer world.

Neither do we assume that very early abstract picture development is a result of teaching. In ontogeny, a substantial part of the early picture development is similar for very different contexts of picture production, that is, it is cross-cultural. Moreover, most adults are not aware in detail of the first types of graphic differentiations made by young children and therefore they are not apt to teach early picture making (therefore adults name early graphic manifestations scribbles and permanently ask what it is).

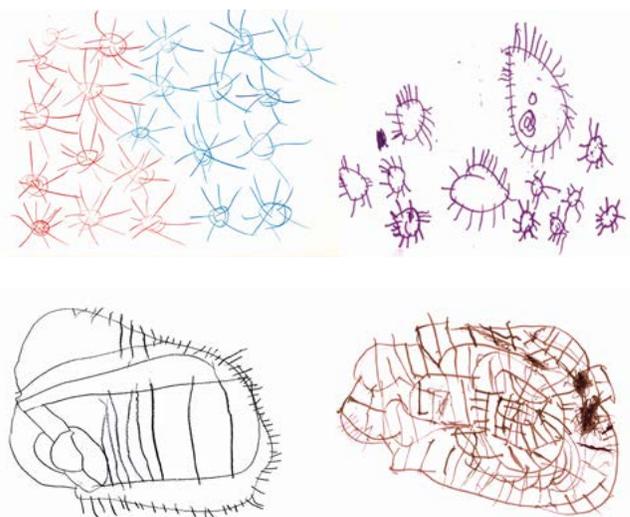


Figure 8. Cross-cultural aspects of early graphic expressions. 8a: Similar form configurations in pictures of an Indian (left) and a European child (right), age = 3y 10m and 2y 8m; 8b: similar drawing structures of two graphic complexes in pictures of an Indian (left) and a European child (right); age = 4y 10m and 5y 8m.

The view that the formal understanding of very early graphic form configurations cannot be derived from looking at the outer world is strongly supported by the schematism of early depictions. The first system of depiction must be schematic: Only schematic drawing and painting allows for the depiction of very different motifs with very limited graphic skills, experiences and differentiations, and with only an emerging awareness of the possibility of visual analogy formation on a flat surface. Thus, early depictions are schematic not in terms of simplifications but in terms of simple form configurations associated with an analogy. Hence, a rectangle can represent a part of a house, a leg, the body of a cow, the rays of the sun and so on. And similarly, this also holds true for the early kind of coding by means of using abstract graphic forms as symbols for something not connected to the graphic itself. These early codes are in their turn schematic and rely on the same graphic forms and types of arrangements as observed for depiction.

The abstract as the inherent syntactic character of drawing and painting

Pictures do not emerge resembling something, nor are they ruled by a code. Resemblance and coding need a previously developed syntactic basis and a corresponding formal consciousness. We are misled by both the concept of pictures as basically being depictions (and abstract pictures as ornaments, or an aspect of tribal art or a phenomenon of modern art, and so on) or coded denotations, and the concept of a syntactic manifestation as in principle referring to something other than itself. We are also misled by the concept of aesthetic expressions as principally being related to beauty. The difficulty we are confronted with is to understand how it is that graphic forms and their configurations as the syntactics of pictures emerge

self-referred; with no meaning other than the graphic itself, and its conceptual character as such preceding a valuation of beauty. Or if, in a specific context of very early graphic expressions, there is a reference to something else in terms of a depiction or a coded denotation, then this reference is attached (i.e. the same graphic manifestation in different contexts referring to very different subjects) or it is associated (i.e. concerning only basic analogy formations between a graphic configuration and a depicted subject, or concerning a very limited set of graphic configurations for denotations); and if, in a specific context, the graphic manifestation is validated when viewing, then this contemplative attribution is a consequence of, but not a imperative reason for, early graphic expressions.

Further, we must face the fact that the abstract in pictures is always inherent in terms of its syntactic character as such, and that the abstract is to a certain part autonomous of depiction or coding, both with regard to the attributes and structures of pictures and to their development. The very early pictures in ontogeny on the one side and the digital character of today's pictures on the other may stand for this abstract inherent character as a paradigm.

What early abstract manifestations in pictures are, and what they are not

Early graphic manifestations are often named abstract in terms of a negation of the figurative. But early graphic manifestations, although indeed not depicting, do not oppose depiction. They precede depiction.

Because of their abstract character, early graphic manifestations are often understood as signs or ornaments, associating either a coded symbolic function or only a supplemental function of adornment. But, again, these manifestations in their emerging state precede both graphic co-

des and the differentiation between primary and secondary or supplemental roles. They are not, as such, coded denotations or ornaments. (However, according to Peirce, they have sign character; see below.)

Early graphic manifestations are often named abstract because they are simple in graphic form, variation, composition, arrangement and colour effects. However, although they are indeed simple, as said, they are not simplified.

These manifestations are also often named abstract because they are conceptual. However, they are not to be understood as primarily a product of abstraction in terms of reduction and induction.

A reminder: in the early development of produced tools, form does not simply follow but also yield function

To put these considerations in a general context of the development of produced forms, a similar view as taken here has already been present in the literature for a long time with regard to the first produced forms we know of humans, that is, stone tools. Already Compton (1916; see Bredekamp, 2014) assumed that the development of early stone tools in prehistory follows a form-related awareness, consciousness and semantics, according to which form production yielded function, and not form production followed function. This thesis has recently been considered by some scholars discussing the development of stone tools (Lorblanchet, 1999; Le Tensorer, 2012; Bredekamp, 2014; in this context, note also the discussion of non-utilitarian lithic objects; see e.g. Moncel, 2012): above all, these scholars emphasize

- (i) the double character of the tools as sculptural and functional;
- (ii) the difference between a single generalized form of the tool related to multiple kinds of use;
- (iii) the necessity to dissociate or even isolate

the conceptual aspect of the tool form from its function during the process of tool production, involving a highly developed stereometric notion and conceptualization;

(iv) the complexity of the tool production process involving in its turn a highly developed conceptualization, linking stone materials, form imagination and processual stroke techniques;

(v) the embedding of the tools into tradition and teaching, thus creating form dialects, tool fashions and a tool history;

(vi) the observation of a substantial number of tools without any traces of their use; and

(vii) the observation of relating the tool production to fossils and to rare stone materials.

Icons: the early pictorial abstract as early graphic ideas

However, tools are not pictures. Pictures have no function in terms of a physical use. Thus, given that even for early tools and their development, motivated by and related to a physical use, their abstract (conceptual, self-referred) form can barely be understood as being derived in a simple and direct way from their use as a tool, then, how could one imagine that the first graphic forms are ever derived from something? If they were derived from a motivation or concept of figuration or of coding, where would these motivations and concepts have come from?

Thus, if the formula of form production may yield function may prove to let us better understand the early development of tools, the formula of graphic form production offers depiction and coding may prove to help us understand the early picture development.

Considering picture genesis in phylogeny, we should not rely on the magnificent and stunning cave paintings and figurines attributed to Homo sapiens. We should account for a lar-

ge time range of graphic development back to Homo erectus (on this matter, see also Bredekamp, 2014). Although we do but have a few records for this time range (Lorblanchet, 1999; Henshilwood et al.; 2002, Joordens et al., 2014), they are generally of the abstract kind. We should also reflect upon the fact that the abstract graphic forms that have been found are strikingly similar both in their concrete manifestation as well as in their general graphic structure, although they relate to very different time periods and very different geographical areas. As mentioned above, early picture genesis in ontogeny also proves to be cross-cultural. According to Peirce (1932, 2.304), 'An icon is a sign which would possess the character which renders it significant, even though its object had no existence; such as a lead-pencil streak as representing a geometrical line.' A line as a graphic manifestation, although being abstract, is thus considered as a sign, and its meaning, its signification is self-related in terms of its relation to an idea, without which the visual manifestation is not understood as graphic but is experienced as a mere trace. Based on such a definition, we assume that pictures in their early stages emerge and develop as humans become aware of the differentiation of graphic ideas. Thereby, their character is defined by the understanding of a concrete application of colour or an engraving on a flat surface as related to a concept of the two-dimensional and a concept of formal differentiation within that dimensionality. Thus, the abstract of early pictures is understood here as the first iconic character of pictures, first in terms of both their structural character as two-dimensional and their temporal emergence in the course of picture genesis, which is self-referred and ideational. Early pictures are realizations of early graphic ideas. Only in the course of their development will the feasibility of figuration (analogy formation,

resemblance) and coding come about.

Addition

To avoid misunderstandings: We do not want to insinuate that early pictures in phylogeny emerge purely, that is, that they are not related to or even permeated by other kinds of productions and expressions, their conceptual basis and the related needs to survive in a specific environment, or that they are unrelated to social and communicative motivations and aims, including teaching and tradition, and so on. On the contrary, we suspect that the emergence of graphic manifestations is strongly related to living conditions, social contexts and interaction, tool production and language. Here, our only aim was to argue for very early graphic manifestations as not being directly derived from a depiction or coding purpose, but as revealing the discovery of graphic icons, probably as a consequence of a contemplative state of mind.

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