

Visual metaphor in children's learning processes





A festive thought

Visual metaphor in children's learning processes

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July 2022 (1st edition) Printed in Italy

ISBN 978-88-85508-03-3

published by: REGGIO CHILDREN srl Via Bligny 1/a 42124 Reggio Emilia - Italia tel. +39 0522 513752 fax +39 0522 920414 info@reggiochildren.it www.reggiochildren.it

Cod. Fisc. e P.IVA 01586410357 - Cap. Soc. Euro 1.000.000,00 Iscr. al Reg. Impr. di Reggio E. nº 01586410357 - REA nº 197516



Visual metaphor in children's learning processes

Exhibition







exhibition-atelier realised by

Reggio Children Preschools and Infant-toddler Centres – Istituzione of the Municipality of Reggio Emilia

in collaboration with

University of Modena and Reggio Emilia, Department of Education and Human Sciences – Metaphor and Narrative in Science Research Centre

exhibition curated by

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exhibition structure made by

Accademia di Belle Lettere, Modena

printed by

Madio Print, Reggio Emilia Seven Group, Reggiolo (RE)

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A special thanks to all those who contributed to making the works in the *Preview* and *Migrations in freedom* sections.

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Esperia, Lavis (Italy)

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Instructions for viewing the videos using the QR codes on pages 50, 65, 70, and 155:

- scan the QR code and you will be redirected to the Reggio Children website
- access or register to enter your personal area
- when you enter, the video will be added to your collection
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- once you have added the four videos to your collection you will no longer need to scan the QR codes and you can view the videos directly in your personal area on the website www.reggiochildren.it

his catalogue presents research – carried out by Reggio Children, the Istituzione of Preschools and Infant-Toddler Centres of the Municipality of Reggio Emilia, and the University of Modena and Reggio Emilia's Department of Education and Human Sciences – that seeks to reflect on and make visible the mental processes activated in young children by their understanding, and producing, visual metaphor in the context of early years services.

By metaphor we mean the tool of language and thinking that connects distant elements of reality, thereby constructing new reality and new meaning.

The making of metaphor is a process that leads to unusual, unexpected and often original outcomes.

It corresponds to an investigative attitude and a participation in reality that invites our thoughts to open up and expand beyond canonical confines.

Metaphor is a genuine system organising intellectual development; a tool of knowledge creating different ways of seeing the world.

There can be no doubt metaphor is a festive intuition, elaborated through creative thinking.

Creativity, irony, the capacity for creating analogy and harnessing paradox are presented here, for us to welcome them into daily life with more awareness.

The reasons for research and an exhibition on metaphorical processes in children aged o-6 years

Paola Cagliari* and Claudia Giudici**

his catalogue of the exhibition *A Festive Thought*. *Visual metaphor in children's learning processes*, is the synthesis of research work done over two years, with collaboration between Reggio Children, the Istituzione of Preschools and Infant-toddler Centres of the Municipality of Reggio Emilia, and the Department of Education and Human Sciences at the University of Modena and Reggio Emilia.

Why carry out research and create an exhibition on visual metaphor in the knowledge processes of children aged o-6 years?

We have always felt the theme of metaphor, or better, the metaphorical processes children go through as they proceed with their construction of knowledge of the world, to be a sensitive theme, mainly for two reasons. The first, that children are natural producers of metaphor: it has been suggested in the past that this natural propensity in children is an improper use of the little knowledge they have of the world, to explain new phenomena. We believe this is a reductive interpretation because, in reality, using what knowledge we have to interpret the new things we encounter is a natural knowledge process, and children do this with such sensibility, such pleasure, and sense of irony that they make us understand it is not a lack, but a "multiplication" of their knowledge, and of their cognitive, perceptive, relational and aesthetic abilities.

The second reason for the great interest we have in processes that are metaphorical in nature is that they are particularly creative processes, and therefore allow us to amplify and enhance divergent thinking, increasing the capacity for creating original elaborations.

The processes children activated in the contexts we of-

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fered, and which are visible in the exhibition, confirm a constant transiting between the verbal level, the concrete and sensory level of the objects, and visual representation. These transits are not in sequence, but go back and forth, and although they might appear to adult eyes as irregular and disorderly, in reality they generate a process of knowing that is capable of integrating several levels. This promotes and heightens children's capacity for reading, interpreting and understanding the world, not only in descriptive, denotative terms, but also in terms of connotation. In fact metaphor adds *quality* to the children's perceptions and representations of reality.

Both these reasons led to the hypotheses that adults with a greater knowledge of children's metaphorical processes might affect the more overall quality of the learning contexts we offer children in educational services.

Why focus our attention on visual metaphor?

As Umberto Eco has said, for its origins to be explained in some way, "verbal metaphor itself often elicits references to visual, aural, tactile, and olfactory experiences". The focus of our interest in processes of a metaphorical nature acted out by children was to extend them and make them more conscious, so we felt the physical, visual, and kinaesthetic dimensions were the most pertinent and productive.

Children aged o-6 years prefer to lean their learning on the concrete things in the world, not because they are incapable of abstraction, but because they "embody" abstraction in the tangible world. Acting on objects and images lets children work with greater awareness and autonomy on processes of transformation and of transposing a subject, quality, or characteristic from one domain to another.

For these reasons we embarked on research together with the Department of Human Sciences at the University of Modena and Reggio Emilia. Relations have never been exclusive academic in the history of Reggio Emilia's experience of education. The collaboration with Modena and Reggio Emilia University came about thanks to our acquaintance with Professor Contini and her collaborators (including Dr. Alice Giuliani), and the reciprocal esteem between us, and because we had already shared other experiences, readings and conversations. In this case, therefore, the relation with the University was structured around a common interest, and synchrony of vision, though with different perspectives, and this made the process richer.

The research group we formed was multi-disciplinary and multi-perspective; a group that proved capable of working with a good degree of sensitivity and capacity for interpreting processes. The research was always conducted with great delicacy and respect regarding interpretations, both by teachers, and by the research group, because there is always a risk of attributing meaning that "goes over" the children's heads, and a great deal of care and attention was given to this. A phase of pre-research came before the research itself, allowing partners to reciprocally refine their theoretical perspectives, and define a shared protocol of understanding.

In Reggio Emilia's municipal infant-toddler centres and preschools research has always been a foundational and daily dimension, based on the scientifically proven idea that knowledge is an original (subjective) construction, of human beings in relations with otherness, the world, and the products of culture.

Because knowledge is construction, from birth it commits us to constantly [re]searching new relations, new connections, explanations, and conceptualisations, new discoveries about subjects of knowledge and the ecosystems they are part of, extending the capacity of human beings for understanding the world and acting in it.

Research is a foundational and daily characteristic of the work of adults in infant-toddler centres and preschools, in Reggio Emilia's municipal education services. This is a choice of ethics, coherent with the idea of education and human being this experience of education is founded on. If knowledge is construction then adults have an ethical duty to be curious explorers of the multiple different ways children (and adults) have of interpreting reality, and of the plurality of theories and visions that give us a richer more complex image of reality. If knowledge is construction, the work of teachers changes: they are no longer experts on the best methods for transferring knowledge considered as a stable and defined corpus of information, but adults trying to discover the multiplicity of ways in which knowledge is structured and organised by children, and searching for the best ways to dialogue with children in order to prompt re-structuring and advancements.

These are teacher researchers, in the collaborative and interactive dimension of a working group, resisting the temptation of teacher freedom to take advantage of the rich wealth of learning and knowledge of a multi-disciplinary work group. And parent-researchers involved in interpreting children's knowledge processes through

documentation, and the multiple and varied forms of meeting offered and proposed; opportunities that allow all the adults to grow with an understanding of the culture of childhood and its rights.

The production of knowledge in the infant-toddler centres and preschools is in a dimension of individual-in-a-group. This dialogue dimension is practised constantly and tends towards the construction of a mental habit, capable of countering the fundamentalisms and one-way thinking that have such seductive power for those who fear the loss of certainty. Considering everything we have said, it follows that Reggio Emilia's infant-toddler centres and preschools are the primary and irreplaceable places of our educational research, and responsible for the childhood culture they produce and make visible.

To support and qualify this role, infant-toddler centres and preschools promote daily research, and activate research with different partners from other worlds, not only those of pedagogy and psychology. This extension of each centre and school's inter-disciplinary work group, with people qualified in specific areas of learning, makes it possible to go deeper into specific content systematically and with dedicated tools, enriching our scientific knowledge and educational contexts.

All research needs a gaze that is open and not based on pre-defined conditions, including the conditions of agreements that exist between research Institutions. The possibility Reggio Children has been capable of constructing, of multiple relations with research bodies, universities, and different kinds of organisations all over the world, is certainly one of great opportunity for our educational services. In research projects with outside partners, our infant-toddler centres and preschools are not offered simply as places for doing the research, but as active partners in all the different phases of designing, realising, documenting, interpreting, and processing results. In fact we consider it fundamental that the method of research should be respectful of children's and adult potentials and rights, and in tune with the values and theories that shape the educational experience of the infant-toddler centres and preschools.

As well as children's processes, the research also focused on the actions of adults, with the aim of understanding what contexts might be "promising" for metaphor, and to what extent. What words, what dynamics, what languages, might constitute a context, or situation, activating the metaphorical processes that give potency to the quality of children's descriptions of the world, in non-denotative forms. An important aspect of research in Reggio Emilia's infant-toddler centres and preschools is combining theoretical, knowledge-based research on human beings and their processes with a greater educational capacity in adults and schools, so that they are capable of promoting educational contexts tuned to children's ways of knowing, and ever more revealing of how human beings construct knowledge from birth.

Another important aspect (which academic research does not always include) has to do with the dynamic between children, that is to say how infant-toddler centres and preschools have the objective of building learning communities that promote and make use of an atmosphere of exchange, "contagion", and conflictualisation

of ideas, all capacities that grow in the dialogue between children, and in the dialogue between the multiplicity of languages.

And finally, it is unusual for research to gain visibility through an exhibition, which requires specific languages to be read and enjoyed by the public. In the case of Reggio Emilia the theory and practice of documentation is a structural part of designing the life and work of our municipal infant-toddler centres and preschools.

Documentation, created in multiple different media, is the "script" that makes the constant dialogue between children and teachers possible, the constant, shared construction and reconstruction of learning contexts. Documentation is the material that structures the professional learning or "formation" of teachers, their self-organised professional learning, and the participatory dialogue with parents. Through documentation infant-toddler centres and preschools make themselves visible and evaluable to all those who wish to encounter them.

Therefore the documentation used in putting together this exhibition was first and foremost a tool in teachers' work, a fabric, in which the research took on a communicable form, in a text we could call syncretic, that is to say, where different orders of language co-exist.

Readers can also enjoy a series of short videos making visible how children acted with objects while transforming them, a possibility we believe adds richness to the deeper exploration and reflection this catalogue affords.

¹ Eco, U. (1984), Semiotics and the Philosophy of Language, Bloomington, Indiana University Press, 1986.

Metaphor and metaphoric processes

Annamaria Contini* and Alice Giuliani**

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Metaphor and knowledge

T etaphor is no longer considered the simple substitution of one literal term for another (for example "Achille is a *lion*" in place of "Achille is *coura*geous"), or a device for embellishing language, or making it more incisive. The idea that metaphor is not only a language tool but also a thinking tool – a way of extending and enriching our knowledge of the world - is now established in several fields of study. Numerous publications consider the subject of metaphor from different perspectives, such as philosophy, linguistics, psychology, and education and learning. So it is no coincidence that more recent research speaks of *metaphorical process*, suggesting the word *metaphor* is a sort of abbreviation, standing for a series of cognitive operations including conceptual transfer, extension of meaning, construction of inference, categorisation, and re-categorisation¹.

From pioneering studies by Max Black to the theories of Lakoff & Johnson, what emerges is that metaphor implies an interaction between two semantic/conceptual domains, the possibility of establishing a precise correspondence between them, and seeing one in terms of the other. Metaphors project relations, properties, and knowledge from a *source* domain onto a *target* domain, organising more complex and/or abstract concepts into more familiar and/or concrete ones. For example in a conceptual metaphor like LOVE IS A JOURNEY, lovers are seen as travellers on their way to a destination, their reciprocal love is a shared vehicle, difficulties during the journey correspond to difficulties in their relationship, and so on. The cognitive function of metaphor depends

on this projection mechanism, which is shared by verbal and visual metaphor alike. Picasso's sculpture the *Bull's Head* activates metaphorical process by projecting traits belonging to a source domain (the bicycle handlebar) onto a target domain (the bull's horns).

That metaphor has power for knowledge is no longer doubted in current debate, on the contrary, it constitutes a rich field of investigation spanning several disciplines. But two fundamental issues remain to be understood: what relationship exists between the conceptual and linguistic dimensions in metaphor; and what relation there is there between metaphor's knowledge aspects and its creative, innovative aspects.

Metaphor and everyday life

"Nature is a temple where the living columns...". The word metaphor immediately brings to mind typical expressions of poetic language, like Baudelaire's celebrated words². Instead Lakoff & Johnson, in a book that triggered a "cognitive" shift, observe that metaphor's nature is pervasive and ubiquitous, and that any number of examples can be found in even the plainest everyday speech³. If there is a tendency to underestimate how much metaphor exists in ordinary language it is because we are often dealing with conventionalised metaphorical expressions that have entered into and become part of current language. But these kinds of expression ("Our relationship has reached a dead-end" for example) are a manifestation of underlying cognitive structures – conceptual metaphors we use to organise the world and put it into categories

(such as LOVE IS A JOURNEY). Conceptual metaphors are not arbitrary or casual, in that they are sometimes based on cultural values and sometimes on more embodied sensory-motor schema connected with our physical selves (for example our upright position is the basis of an directional metaphors such as MORE - UP, LESS - DOWN). Metaphors based on physical and sensory experience are more universal than metaphors defined culturally.

The theory of conceptual metaphor is now a widely shared and unavoidable perspective. However a focus on metaphor at this level of our thinking has overshadowed metaphor's communicative and linguistic characteristics, which instead are highly relevant to a deeper understanding of metaphor's role in different areas of our daily life, from advertising to politics, from medicine to education⁴.

The effect of metaphor on doctor-patient communication is a new and little-explored research area, though the bibliography has grown much in recent years. Various studies show how both doctors and patients make use of metaphor in their conversations: patients to describe their symptoms and sensations, and doctors to make concepts considered difficult more accessible.

Another area receiving increased scrutiny is the use of effective metaphors in education, particularly in connection with the sciences. Metaphors have the capacity to transfer knowledge from a familiar field to a less familiar field and can facilitate the learning of new concepts. Language and words play a crucial role in both medicine and education, and metaphor can provide an invaluable tool, given that we often need to formulate things verbally in order to see them a certain way.

Gerard Steen's *Deliberate Metaphor Theory* argues the necessity of integrating conceptual aspects of metaphor with the aspects of language and communication, and distinguishing between the intentional metaphors we produce with a deliberate aim of expressing ourselves in metaphorical ways, and thus generally more innovative, and the metaphors we use unconsciously which are usually more conventional⁵.

Metaphor and innovation

Metaphor's knowledge power is described in different ways depending on theoretical perspectives. For example in the theory of interactive metaphor developed by Max Black, the author insists on metaphor's capacity for establishing new connections between concepts, and thus transforming an initial meaning we started with. For Black, metaphor does not only mirror the pre-existing structures of a concept but tends to challenge them, at the same time changing our view of things we usually see based on certain conventions⁶.

Paul Ricoeur's position of *living* metaphor seems more radical. He sees metaphor as a device for semantic innovation, a place where meaning emerges and is produced, capable of opening a window onto the mystery of creativity. As original metaphors re-describe the world they transgress the conventions of language, allowing us to see things in a different way, and indeed, to see things we could not even glimpse before⁷.

However, with few exceptions⁸, recent debate has put metaphor's power for innovation aside: at the same time

the process of understanding metaphor has been investigated much more systematically than the process of producing metaphor.

The research project *A festive thought. Visual metaphor in children's learning processes*, which has generated an exhibition of the same name, included among its objectives a deeper probing of the complementary nature of these two aspects: knowledge and innovation, understanding and production.

The idea that metaphors "play" with concepts would seem to exclude the possibility of their being produced by children who have not consciously mastered differences and relations between concepts. In reality, if we give value to metaphor's creative side, it accounts for the processes and products documented in this exhibition. In fact the many languages of children involved in these activities, has supported the creation of visual metaphors that, perhaps more clearly than verbal metaphors produced by adults, manifest a potential that is as knowledge-based as it is innovative. For children, transforming associations of meaning into representations such as drawings or staged sets or layouts, means connecting apparently distant things, and initiating explorations that are also "living" works. What these children, accompanied by teachers, have created shows that metaphor can be an event, something that changes our way of seeing and our experience. In this sense the beauty of a successful metaphor is never diminished by the analysis that helps us understand it.

If we take the metaphor of the *megaphone-lamp* (pp. 112-115): in the process documented in the exhibition there is an initial "exterior" association, so for Samuele

"when you shout" the megaphone-lamp "lights up", to which Gianmaria responds, in a genuine integration of meaning, that "the voice of light comes out" of the lamp. Conceptually speaking we could think of the first association as superimposing elements guided by the similar appearance of their representation (in particular the way the diffusion of sound and light waves is represented). But the idea of a "voice of light" seems to describe a projection that is more specifically metaphorical, a sort of synaesthesia, in which light and its domain take on the consistency of sound, becoming something other than the initial elements. It is important to note that in a further "re-launch" children are requested by their teacher to make a "visualisation" of this interaction and its product, which leads the children to represent, not a static object, but themselves in action with the lamp, almost like a comic strip. Thus the megaphone-lamp takes on the identity of an element in a new game. The work on the megaphone-lamp suggests innovative metaphor is perhaps above all a response to a need for "expression" and communication that arises in interactions between children and children, or between children and teachers.

According to Max Black's observations metaphors require a creative response on the part of a competent reader or listener. There is no standard response when a metaphor is expressed: there can be no rules for creatively breaking the rules. Taking metaphor seriously means always keeping educational dialogue open, knowing that it is inevitable to see the world from a certain point of view, but that once you feel the connections, *then* they are truly present.

¹ Contini, A. (ed) (2017), *Metafora e conoscenza*, in "Estetica. Studi e ricerche", VII, 1.

² Baudelaire, C. (1857), *The Flowers of Evil*, Oxford, Oxford University Press, 2008.

 $^{^{\}rm 3}$ Lakoff, G., Johnson, M. (1980), $Metaphor\ We\ Live\ By$, Chicago, The University of Chicago Press.

⁴ Gola, E., Ervas, F. (eds) (2016), *Metaphor and Communication*, Amsterdam, John Benjamins.

⁵ Steen, G.J. (2008), *The Paradox of Metaphor. Why we Need a Three-Dimensional Model for Metaphor*, in "Metaphor and Symbol", 23, 4.

⁶ Black, M. (1962), Models and Metaphors. Studies in Languages and Philosophy, Itacha, Cornell University Press.

⁷ Ricœur, P. (1975), *The Rule of Metaphor*, New York-London, Routledge, 2003.

⁸ Prandi, M. (2017), *Conceptual Conflicts in Metaphors and Figurative Language*, New York-London, Routledge.

⁹ Black, M. (1979), More about Metaphor, in Ortony, A. (ed), Metaphor and Thought, Cambridge, Cambridge University Press.

"It's a book of numbers..." / part 1

Vea Vecchi* and Sara De Poi**

This is a book that talks of numbers... Samuele, 6.1 years



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small comb can quickly turn into a footbridge suspended between the two banks of a stream, with a line of trees growing along it, or a pea pod can turn into the body of a grasshopper, a mermaid tail, or a moustache.

Several years ago, at the beginning of our experience of pedagogy in Reggio Emilia's municipal infant-toddler centres and preschools, we used to offer children a fun activity that easily fitted with their happy capacity for transforming things. The resulting images in drawing were light-hearted, ironical, and capable of producing marvel. However as teachers we had a feeling there was something more complex behind these processes, that we were only partially capable of glimpsing.

"I have a strong sense of the invisible hidden in what we see", says Edgar Morin¹.

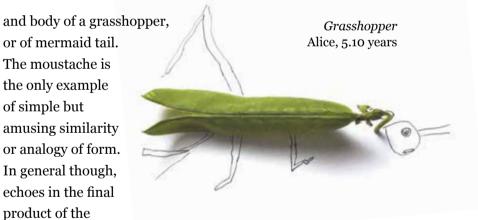
There was discussion among teachers, and some contested the definition of visual metaphor we had given, perhaps too lightly, to these products by children, because they thought it was more correct to speak of simple analogy and simile. But whatever way we defined the products, we all agreed the processes were intelligent, creative, ingenious, and light-hearted, and that often they also contained a sense of irony, and paradox.

It goes without saying that analogies, of form and shape, were generative of many of the children's transformational drawings. However, with more careful analysis we also noted several other elements functioning as generators: the colour and hard material of the comb recall the colour and hardness of a tree trunk; the pea pod's shade of green and fleshiness might suggest the colour



A bridge and a railing for looking down, at water Alessandro, 4.6 years

or of mermaid tail. The moustache is the only example of simple but amusing similarity or analogy of form. In general though, echoes in the final product of the



matrix subject could be traced to children's poly-sensorial approach, and this left us curious for deeper investigation of processes that gave us glimpses into interesting possibilities. We had an opportunity for this deeper investigation after a fortunate encounter with Professor Anna Contini and researcher Alice Giuliani of the University of Modena and Reggio Emilia; an encounter conducive to exchanges of competencies and experience that supported all the subsequent research that followed.