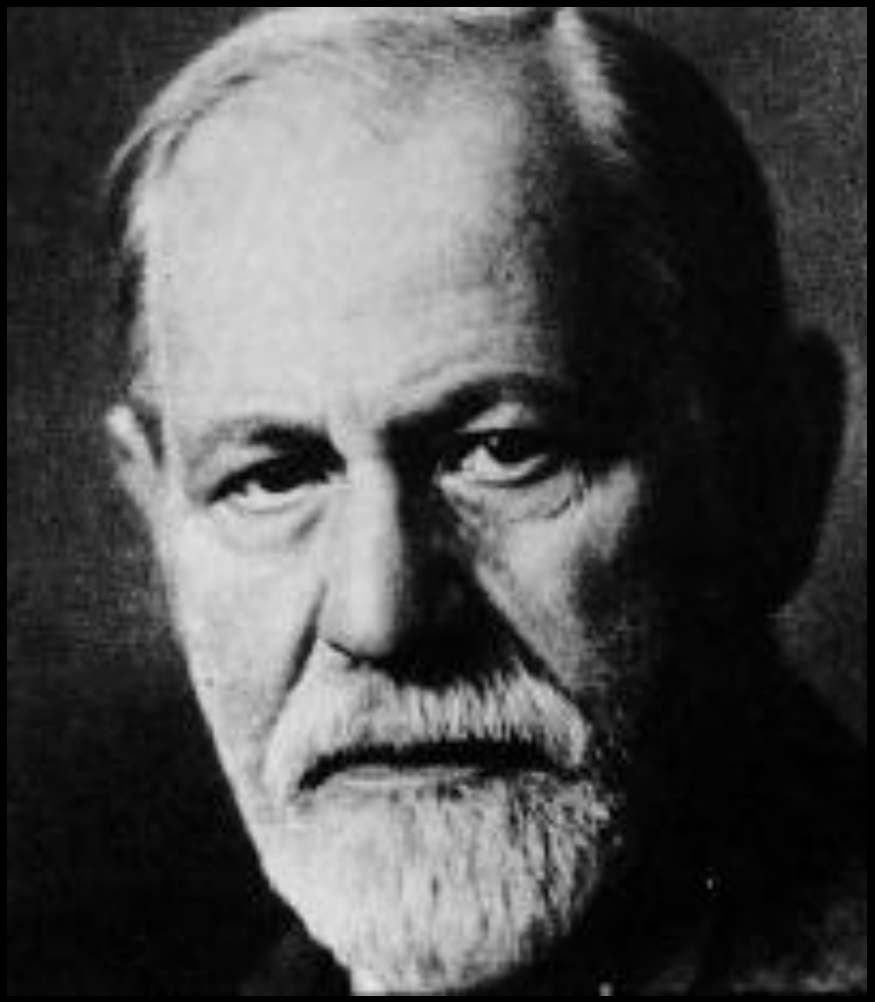
# Habits, social practice and symbol-making. A just-so story.

Vittorio Gallese

Dipartimento di Medicina e Chirurgia
Unità di Neuroscienze
Università di Parma
Berlin School of Mind & Brain



“We are thus prepared to find that primitive man transposed the structural conditions of his own mind into the external world …’

Totem and Taboo, p. 91

# Humans:
# Obsessed by images and stories

# Narrative behavior


“The narrative behavior has in fact given shape and strongly conditioned the development of the cognitive abilities of Homo Sapiens and therefore studying the narrative means having access, more or less direct, to the functioning and structure of the human mind, and with the mind also of Consciousness.”

Michele Cometa, 2017

”… Before rules, says Wittgenstein, we find a preliminary regularity. By this term we must mean the bio-anthropological background […]”.

Paolo Virno
E Così Via all’Infinito, 2010, pp. 53

# Outline

- The bio-cultural turn;
- Culture as advanced cognitive technology;
- Performativity and motor cognition;
- The creation of symbolic objects as ritualized performativity;
- Conclusions

# Looking back……

- “Knowledge proceeds from the senses and from the experience of the surrounding world, and all refers to it. Without limbs and organs, without imagination and memory, the mind has nothing to work with, reason has nothing to elaborate, symbolic creation has nothing to express through signs.”

Johann Gottfried Herder, Ueber Bild, Dichtung und Fabel, 1795

# Question

- Can we question the rigid dichotomy that separates culture from nature, or competence from performativity?

# Hypothesis

- Culture can be considered as an extension or outgrowth of the natural;
- The bio-cultural paradigm posits that any human technology is at the same time the expression of the human mind and of humans' bodily nature, as the latter scaffolds the former.

# Hypothesis

- Culture can be described as a naturally evolved type of human cognitive technology;
- Human cultural evolution is conceived as a dynamic process of cognitive technological development.

# Hypothesis

- A full understanding of the intimate relationship between **Nature** and **Culture** requires a series of preliminary steps:
- 1) It is important to frame humans and their cognitive life within their *Umwelt*.

# “Transaction”

- “we are willing under hypothesis to treat all of [human] behavings, including his most advanced knowings, as activities not of himself alone, but as processes of the full situation organism-environment” .

(Dewey, 1949-1952, p. 97)

# Hypothesis

- 2) We should resist the temptation to draw a sharp line separating material from non-material culture.

- “Culture evolved out of natural opportunities. The cultural environment, however, is often divided into two parts, ‘material culture’ and ‘non-material culture’. This is a seriously misleading distinction, for it seems to imply that language, tradition, art, music, law and religion are immaterial, insubstantial, or intangible, whereas tools, shelters, clothing, vehicles, and books are not. Symbols are taken to be profoundly different from things. […] No symbol exists except it is realized in sound, projected light, mechanical contact, or the like.”

*James Gibson, The Senses Considered as Perceptual Systems* (1966, p. 26)

- “Two modern anthropological themes have been entirely missing from the literature on the origin of art: a broader concern with material culture and a sophisticated formulation of the notion of the social construction of meaning. As a result, articles on the origin of art usually end up by speculating about the process by which “art” was “discovered”, rather than illuminating the broader social, technological and ideational contexts and processes that made complex representational systems possible, desirable and useful.”

Randall White, 1992

# Material Engagement Theory

- According to Malafouris, we need to "reclaim the study of mind and its evolution from the detrimental influences of 'cognitivism', evolutionary psychology, and neo-Darwinism", arguing for "a continuity of action between brain, body, and culture and the primacy of material engagement".

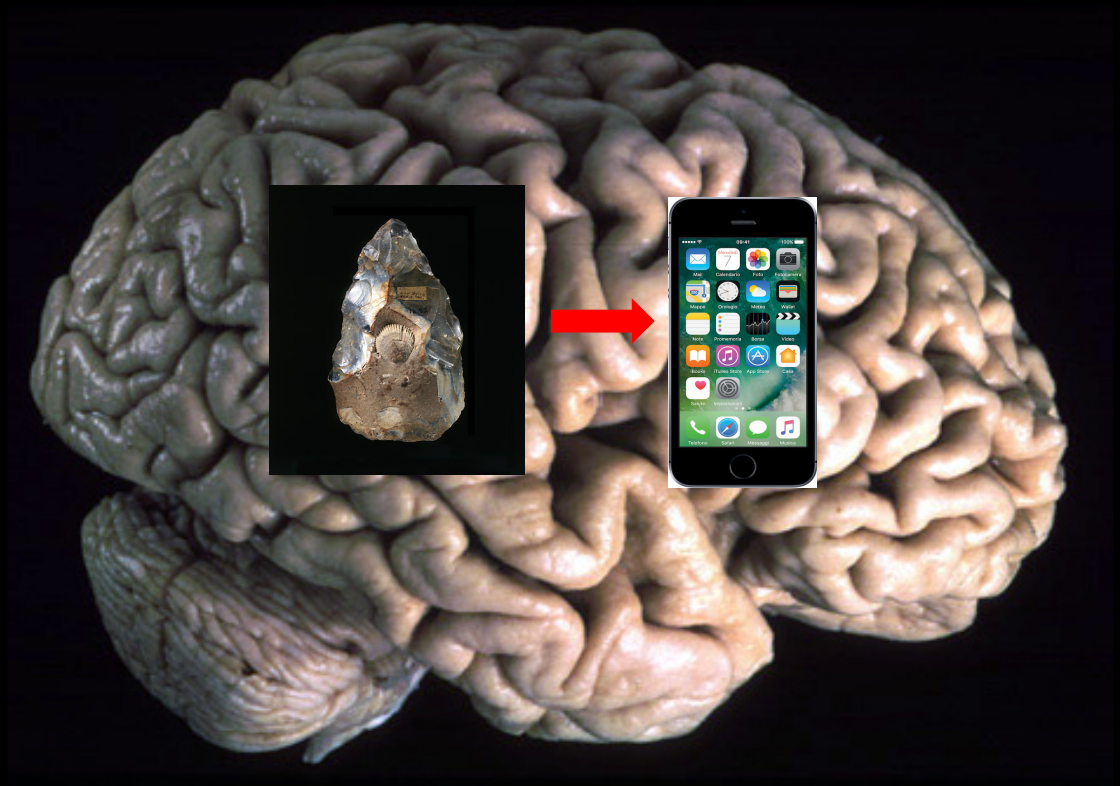
(Malafouris, 2015, p. 352)

Gilbert Simondon
(1924-1989)

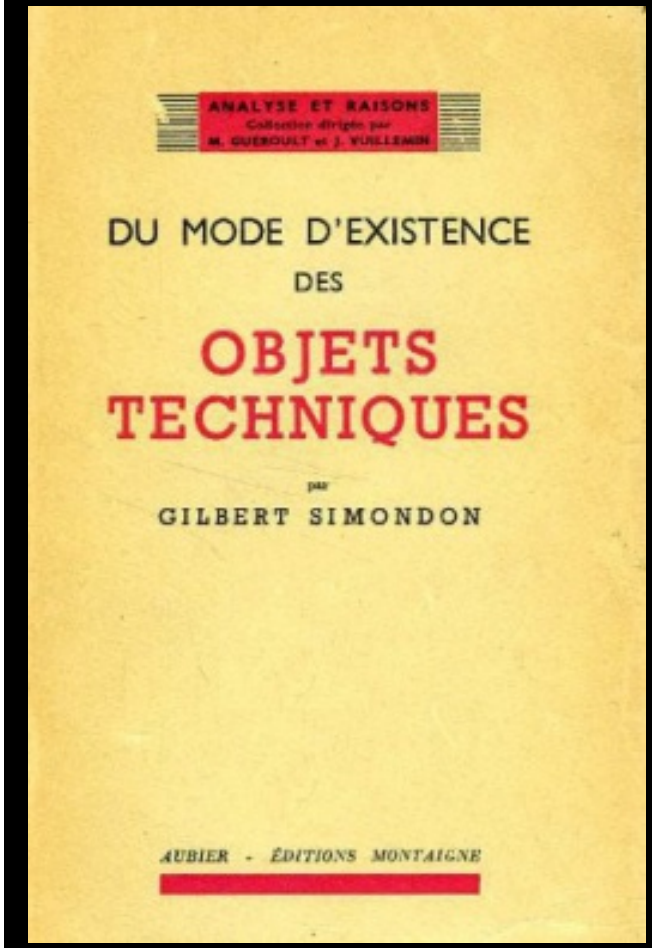
Technology exceeds any narrow utilitarian purpose. As technology expands, it produces new relations between people and things, or between people and people, or between things and things. Technology is a network of relations: far from marking our alienation from the natural world, technology is what mediates between humankind and nature.

# Hypothesis

- Human cultural evolution as dynamic process of technological cognitive development.



- The first prehistoric lithic instruments and the iPhone 7 used by Steven Soderberg to shoot *Unsane* (2018), represent two different temporally distinct expressions of the same technological dimension.




"The technical object understood according to its essence - the technical object such that it has been invented, conceived and desired, and taken up by a human subject - becomes the support and the symbol of that relation we want to call transindividual. By the intermediary of the technical object, an interhuman relation is thus created that forms the very model of transindividuality."

Simondon, Du Mode d'Existence des Objets Techniques, 247

- Cognitive neuroscience can provide new concepts linking nature and culture by studying the mechanisms of the brain and body that support both the creative process and the reception of its results.
- By studying the brain-body in relation to cultural artifacts and their reception, we can better understand the building blocks of aesthetic experience and the genesis of aesthetic concepts.

# New Emphasis on:

- RELATIONALITY (instead of Identity)
- POTENTIALITY (instead of Actuality)
- PROCESSUALITY (instead of Givenness)

# Performativity
# &
# Motor Cognition

**Bodily selves in relation: embodied simulation as second-person perspective on intersubjectivity**

Vittorio Gallese

*Phil. Trans. R. Soc. B* 2014 **369**, 20130177, published 28 April 2014

- The pivotal motor aspects of the bodily self integrate and anchor to a bodily 1-P perspective the multimodal sensory information about the body and about the world it interacts with.
- The Self is open to the world because of the motor potentialities its bodily nature entails.

Developmental Psychology
2009, Vol. 45, No. 1, 103–113


0012-1649/09/$12.00 DOI: 10.1037/a0014436

# Motor Cognition and Its Role in the Phylogeny and Ontogeny of Action Understanding

Vittorio Gallese, Magali Rochat, and Giuseppe Cossu
University of Parma

Corrado Sinigaglia
University of Milan

The cortical motor system, long-confined to the exclusive role of motor programming and control, plays a crucial role in cognition, e.g. in terms of the mapping of space, objects, actions and emotions, both when physically present and when only imagined.

# Multi-Modal Motor Integration

•Fronto-parietal motor areas are neurally integrated not only to control action, but also to build an integrated bodily-formatted representation of:

- (a) actions
- (b) objects
- (c) locations to which actions are directed.

# Embodied Simulation

- Thanks to the activation of the mirroring mechanisms, we can grasp the meaning of the actions, emotions and sensations of others from within.
- Thanks to the mirroring mechanisms, we recognize in what we observe motor goals and intentions, emotions and sensations, without necessarily having to use the inferential reasoning in linguistic format.
- Perhaps at this level we use 'bodily inferences'.

# Hand, signs & the brain

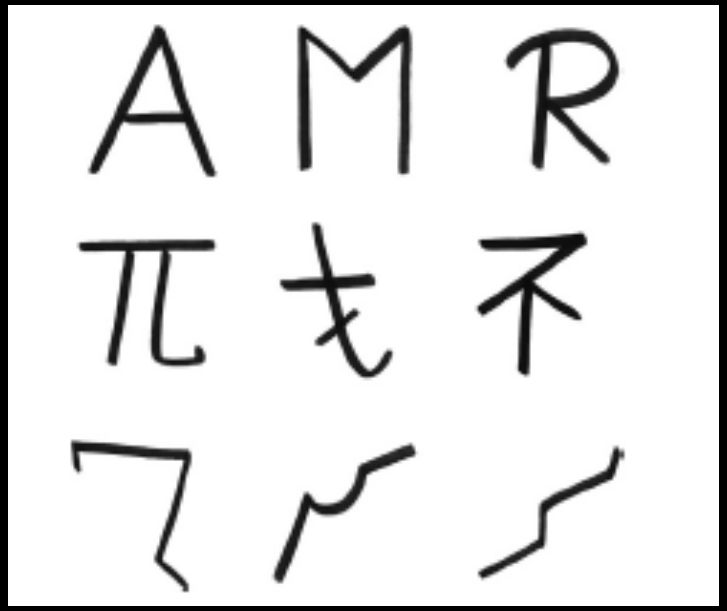
Contents lists available at ScienceDirect

Neuropsychologia

journal homepage: www.elsevier.com/locate/neuropsychologia

# How the motor-cortex distinguishes among letters, unknown symbols and scribbles. A high density EEG study

Katrin Heimann*, Maria Alessandra Umilta, Vittorio Gallese**



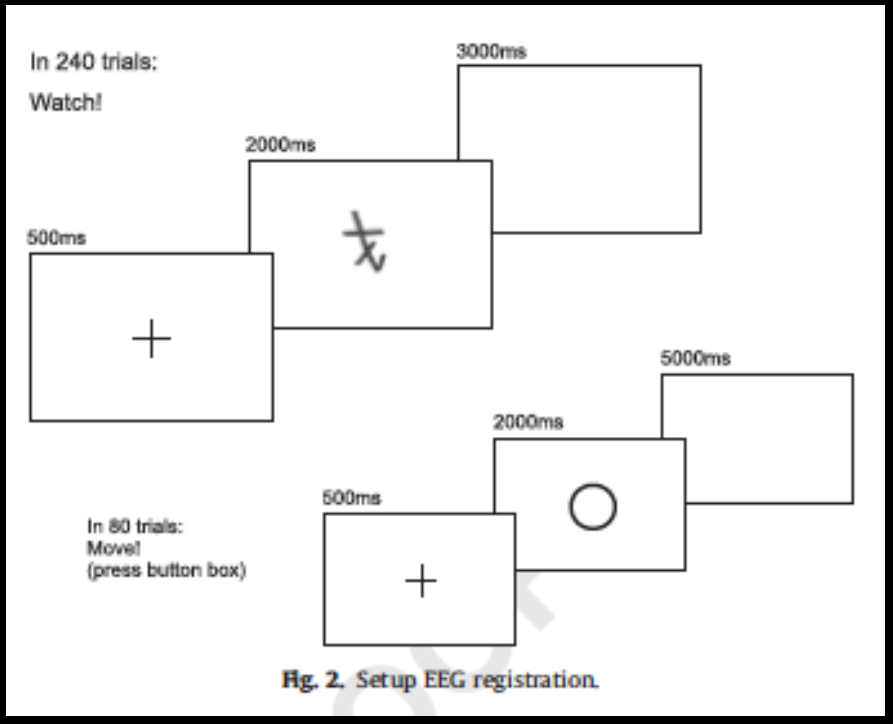


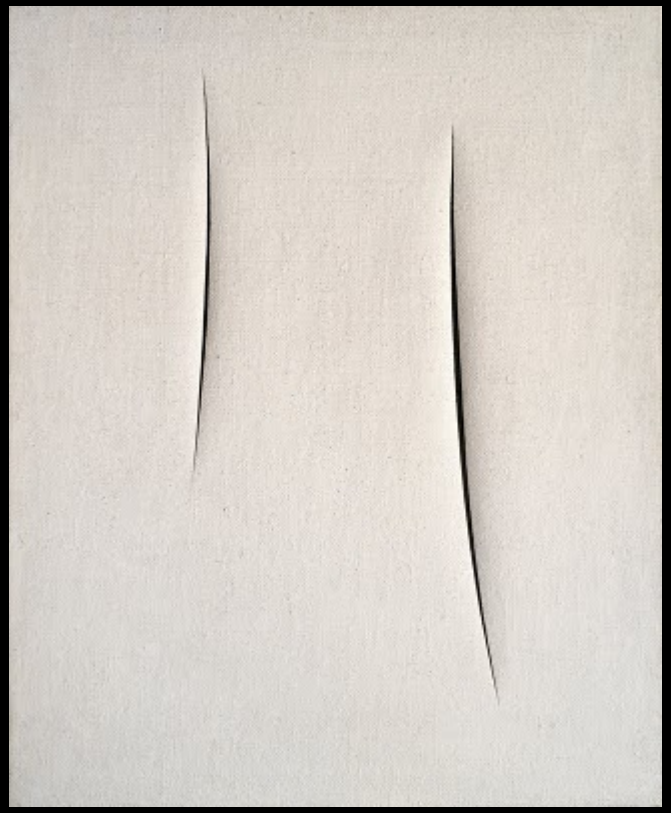

Fig. 2. Setup EEG registration.

frontiers in
HUMAN NEUROSCIENCE

ORIGINAL RESEARCH ARTICLE
published: 16 November 2012
doi: 10.3389/fnhum.2012.00311

# Abstract art and cortical motor activation: an EEG study

*M. Alessandra Umilta'[1,2]*, Cristina Berchio[1], Mariateresa Sestito[1], David Freedberg[2] and Vittorio Gallese[1,2]**



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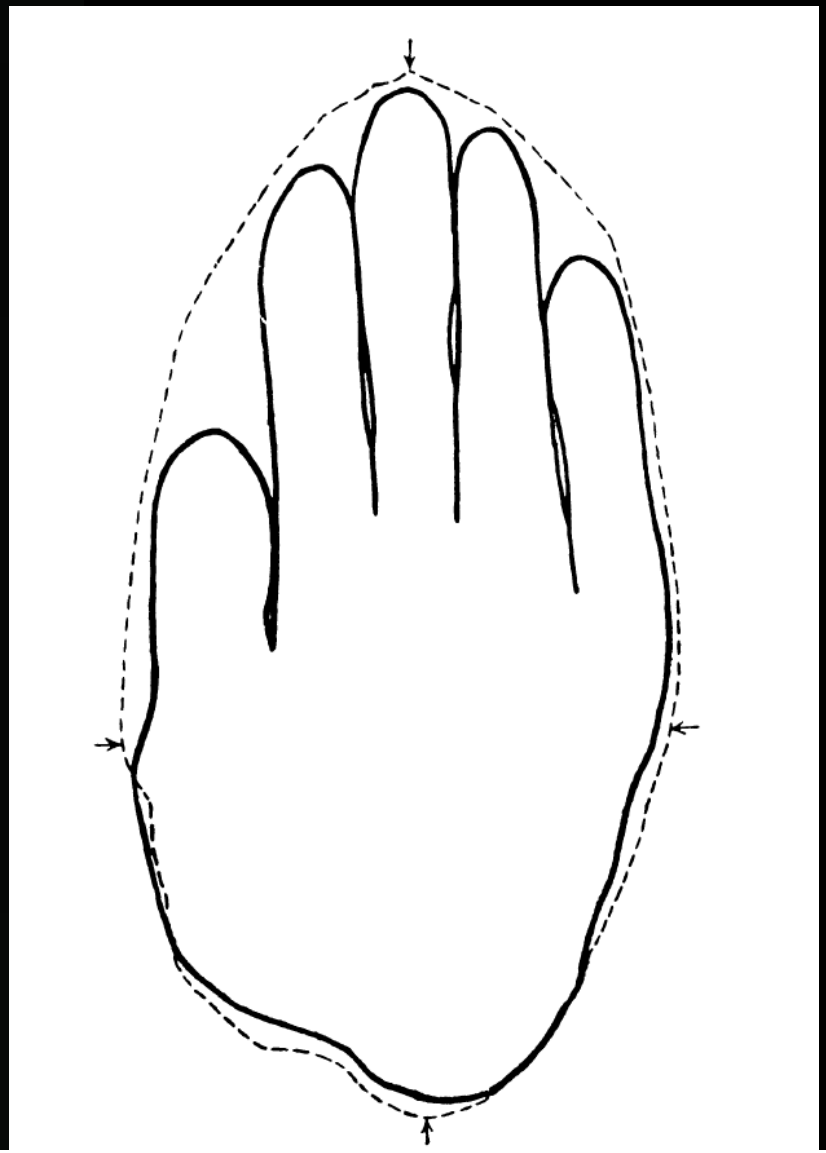
PLOS | ONE

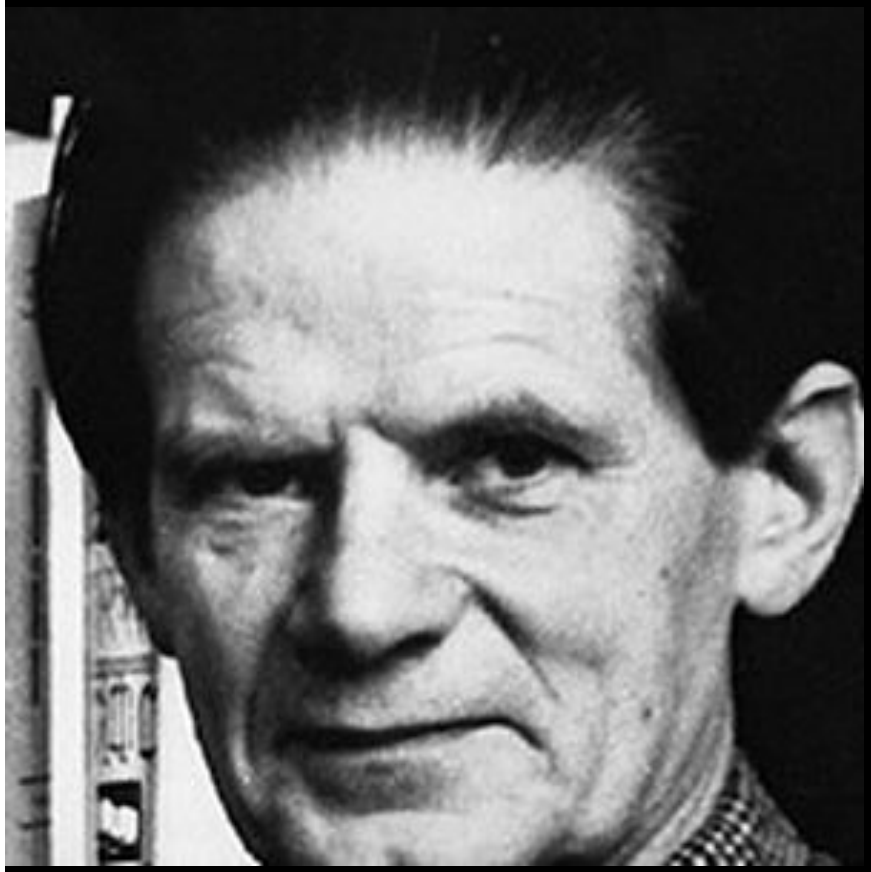
# ERP Modulation during Observation of Abstract Paintings by Franz Kline

Beatrice Sbriscia-Fioretti[1], Cristina Berchio[1,2], David Freedberg[3], Vittorio Gallese[1,3], Maria Alessandra Umiltà[1,3]*

# Humans: The Symbolic Species

# From instrumental to symbolic behavior





“the only biologically undisputable criterion to define the human dimension is the presence of the tool [outil].

(Leroi-Gourhan, 1957, p. 69)

# Developments in tool making

| From Oldowan | to | Acheulien | to End Middle Pleistocene |
|---|---|---|---|
| 2.5 -- 1.2 Ma BP | | 1.6 Ma – 200 Ka BP | 130 Ka BP |
| Homo Habilis | | Homo Erectus | Homo Neanderthalensis |

For extended time periods very little changes


"[...] it must be said that the tools are also the product of a narrative behavior such as the chaîne opératoire after all is. It is the application of a temporal and operational sequence - a before, a durant and an after - but at the same time presupposes a narration because whoever creates an Olduvian pebble, a double-sided or a blade, must be able to foresee (imagine) that a certain object may come out of a given stone and therefore must have a rudimentary idea of time and the possibility of imagining, if nothing else, what cannot be seen. "

Cometa, 2017, 69.

. . . this world [the human world] forms no exception to those biological rules which govern the life of all the other organisms. Yet in the human world we find a new characteristic which appears to be the distinctive mark of human life. […] Between the receptor system and the effector system, which are to be found in all animal species, we find in man a third link which we may describe as the symbolic system. This new acquisition transforms the whole of human life. As compared with the other animals man lives not merely in a broader reality; he lives, so to speak, in a new dimension of reality.

Ernst Cassirer, 1944, p. 24

# Habits and social practices

“Social agents are endowed with habitus, inscribed in their bodies from past experiences. These systems of patterns of perception, appreciation and action allow them to perform acts of practical knowledge, based on the identification and recognition of conventional conditional stimuli to which they are predisposed to react.”

Bourdieu 2000, 138

At some point in evolution something absolutely new happened.

Utilitarian behavior led to the production of material symbols.

The movements and actions that for hundreds of thousands of years have allowed the increasingly skilled and refined creation of tools and weapons, the killing of animals, and the construction of shelters and huts, have also started to be used to create objects of totally different type:

Material objects whose main purpose was to say/represent something to someone else.

- How did the new cognitive ability to create material symbols emerge? One could speculate that the creation of material symbols is the outsourcing of a pre-existing symbolic thought.
- I want to challenge this assumption, arguing that symbolic thinking and the creation of material symbols are not only intertwined, but they determine each other, once behavior turns into habits, and mere actions give way to practices social.

- A minimalist and neurobiologically plausible approach to the origin of the creation of material symbols can benefit from the notions of habits and practice.

# What is a ‘habit’?

“Habits may be profitably compared to physiological functions, like breathing, digesting. The latter are, to be sure, involuntary, while habits are acquired.”

Dewey, *Human Nature and Conduct*, 15

The habits give rise to symbolic expressions and produce meanings through "would-acts", that is, through dispositional potentialities that are both physical and mental.

(Peirce 1992-1998, vol. 2: 402)

- Our brain/body expresses the range of potential relationships with the world that lead to the establishment of a relational self, modeling and delimiting the horizon of the world in which we live.

- We know and understand our world, our Umwelt, by virtue of the relational potentialities instantiated by our body.

(Gallese 2009)

- How are bodily potentialities or motor dispositions transformed in the production of symbolic objects?
- Pierre Bourdieu and the Practice Theory can help us shed light on this unsolved mystery.

- "The Practice Theory as practice insists, contrary to positivist materialism, that the objects of knowledge are constructed, not passively registered and, contrary to intellectualist idealism, that the principle of this construction is the system of structured, structuring dispositions, the habitus , which is constituted in practice and is always oriented towards practical functions. ”

(Bourdieu, 1992, 52).

- According to Bourdieu's model, practices are acquired through *mimesis*.

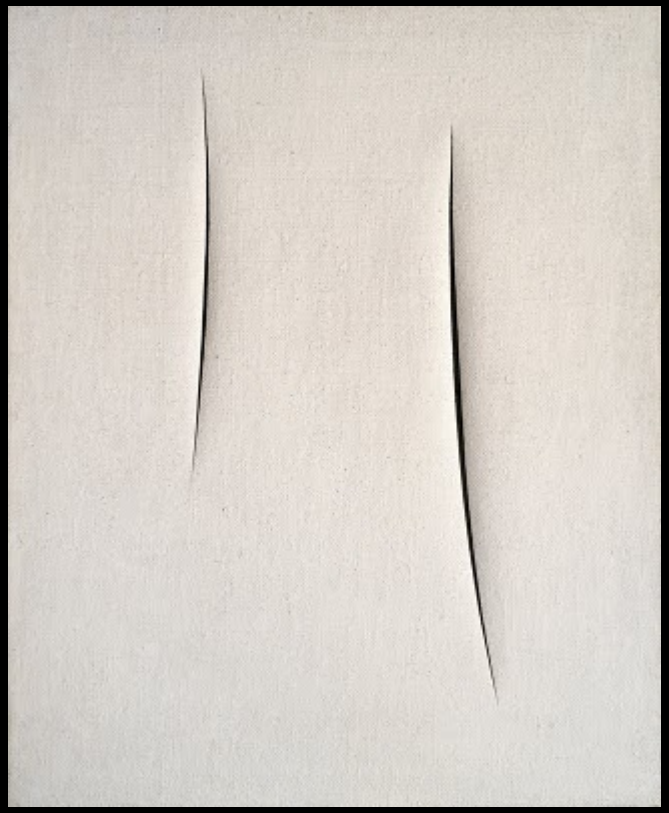
In the Practice Theory, "subjects or agents are not seen as antecedent to the practices, but rather as the product of the practices; the subjects exist only in the context of the execution of social practices. [...] The individual subject in the Practice Theory is not conceivable without the body. [...] The materiality of the body not only provides the place for the competence, dispositions and behavioral routines of the practice, but it is also the one on which and with which the practices work. The body is an actor and an instrument. "

(Scheer 2012, 200-201)

- The body determines social practices, but at the same time is shaped by them. It is within the reciprocity of the body and social practices that cultural artifacts are created.
- Therefore, the creation of symbols and the consequent cultural practices and institutions emerge from the implicit knowledge, the complex set of behavioral paradigms that individuals simulate and internalize mimetically, due to the constant interpersonal relationships they have within the dense network of social exchanges with which they are intertwined from birth.

(Gallese, 2017).

For the anthropologist Alfred Gell (Art & Agency, 1998), following Peirce, the cultural artifacts and what we now designate as works of art are indexes, that is, agents endowed with intentionality that evoke abduction, a form of conjectural inference that it goes from consequences to causes, thus allowing to appreciate the intentionality that led to their construction.



Something similar happens in our brain when we observe the cuts on canvas by Lucio Fontana, where the consequences of the artist's action - the cuts - lead to the simulation of their causes, the gesture of the hand that produces them.

(Umiltà et al. 2012).

Before being a system of symbols, art is a system of action: cultural artefacts exert an action on the world. Art is "a system intended to change the world rather than encode symbolic propositions about it". [...] Visual art objects are not a part of language ... nor do they constitute an alternative language. "

Gell 1998, 6.

# Hypothesis

- The progressive externalization of bodily representational formats, originally evolved to allow our contacts with the real physical world, leads to the creation of symbols.
- Abstract externalization, derived from the representation of what is real, which finds full expression in language, has its roots in transcending the body while remaining within its limits, according to the mechanism of embodied simulation.

# Hypothesis

The creative gesture that infuses material objects with meanings that transcend their immediate practical advantages, could be the result of the fortuitous discovery of a single individual, subsequently shared as a social practice by the other members of the social group, becoming the object of ritualized practices.

An object like this could be the late "translation" of an individual's fortuitous empirical observation: when cutting something on a rigid surface, the cutting activity leaves a permanent trace on it, thus revealing that a practice can persist as a material sign that supports it, even when the practice is over and its agent has long since disappeared.

# Hypothesis

- This "discovery" could have been favored by the constant exposure to the relationship lived between traces of animals and absent animals.
- The deer 'footprint' represents' the deer although it is not present.
- However, this observation may not have been sufficient to lead to the intentional realization of symbolic objects.

# Hypothesis

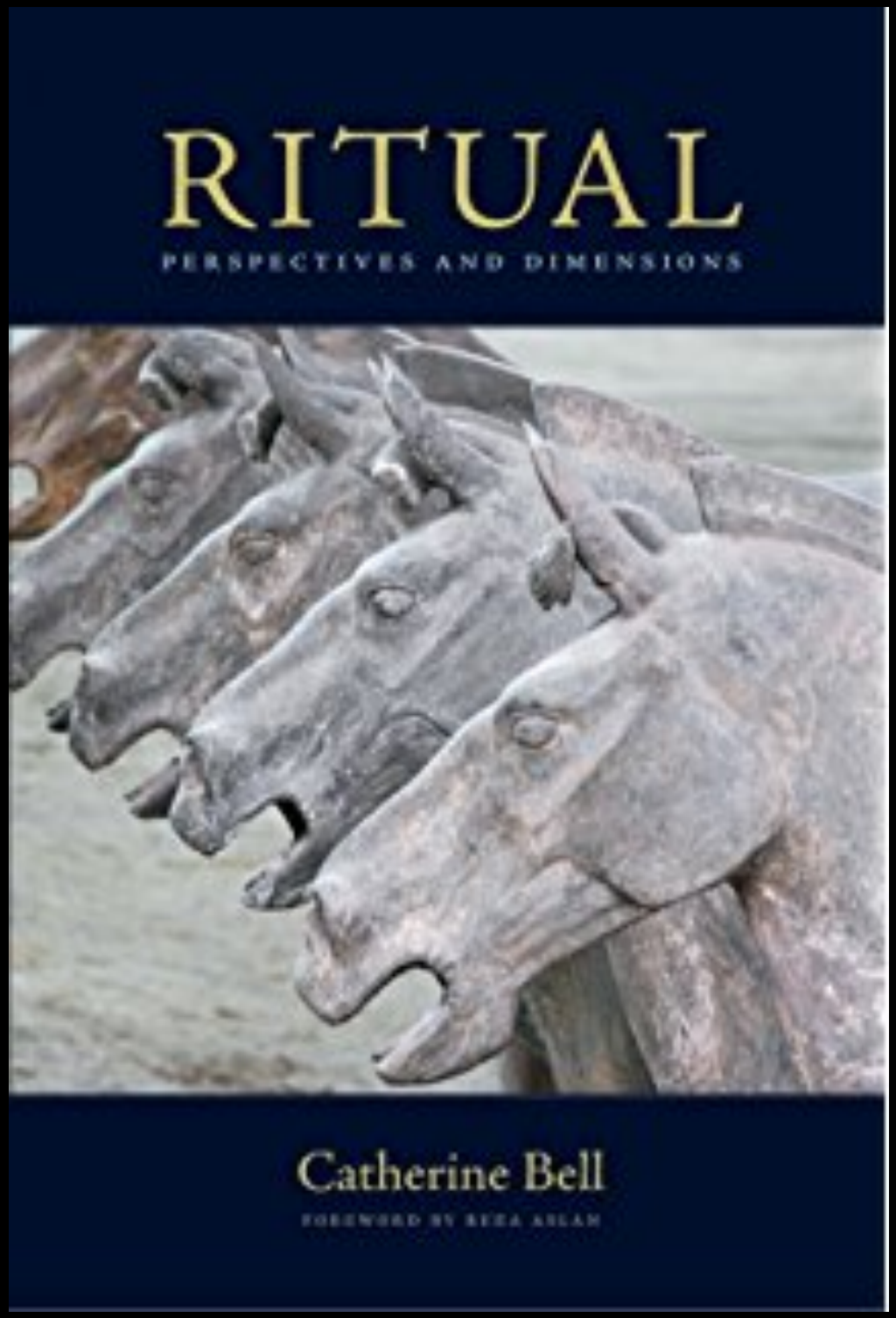
My hypothesis is that something more is needed to create this symbolic object, that is, the possibility of internalizing the causal relationship between action and sign, by its actualization through one's own bodily action.

# Ritualization as cultural performance

Its relevance to the expression of symbolic forms.

# Ritualization

- Zoology:
- "The evolutionary process by which an action or pattern of behavior in an animal loses its original function, but is maintained for its role in showing itself to the other or in other social interactions."


RITUAL
PERSPECTIVES AND DIMENSIONS
Catherine Bell
FOREWORD BY REZA ASLAN

# Ritual

Catherine Bell
1953-2008

Since ritual acknowledges powers beyond the invention of the community and implies correct and incorrect relations with these powers, it is often more likely to generate a social consensus about things. […] Activities that are so physical, aesthetic, and established appear to play a particularly powerful role in shaping human sensibility and imagination."

*Ritual. Perspectives and Dimensions*, 2003, p. 137

# Ritualization as cultural practice

“ […] examples of ritual-like behavior demonstrate the importance of the body and its way of moving in space and time. The body acts within an environment that appears to require it to respond in certain ways, but this environment is actually created and organized precisely by means of how people move around it.”

Bell, *Ritual. Perspectives and Dimensions*, 2003, p. 138

# Ritualization as cultural practice

Repetition-Combination-Memorization

Ritualization

Symbolic Object

≠

- Ritualized performative practices can be symbolic too .
- However, they are confined to the ‘here & now’ of the body.
- By means of performative *symbolic externalization*, cultural artifacts surrender meaning from the temporal finitude of the body.

“The created image invests an inanimate object with significance, but the image is not entirely a psychic process: what is created is not an hallucination.”

Arnold Modell

*The Transitional Object and the Creative Act*, 1970

“The notion that there is something intermediate between the attitude of the creator and the beholder approaches Winnicott's concept of the transitional object.

The interpenetration of the actual environment—that is, the walls and ceilings of the cave itself—with the created image, may represent an externalization of a psychic process: the child's first creative relationship with the environment, which Winnicott has described as the transitional object and transitional phenomena.”

A. Modell, 1970

“I would interpret the paleolithic artist's use of the actual formation of the cave walls and ceilings themselves as a concretization of the interpenetration of the inner and the actual environment, that is, the art work itself is a tangible expression of the psychology of the creative process.”

A. Modell, 1970

“The cultural transformation of the environment may be understood in part as a process modeled on the child's relation to his primary environment, that is, his mother.

Separation anxiety provides the motive for the child's first creative play, and separation anxiety (to which the fear of death is added) may also be the motive for the institution of a magically created environment. Both symbolic processes serve to mitigate the experience of total helplessness.”

A. Modell, 1970

# Conclusions

- Several important aspects of human cognition and culture share a performative character, that is, they qualify as mediated forms of action.

Through the repetition, combination and memorization of particular shared behaviors and actions, and their mimetic ritualization, the social group - through reuse - infuses bodily practices originally evolved for utilitarian purposes with new cultural meanings.

The gradual transition that I proposed from the creation of tools to the creation of symbolic objects:

1) It shows that utilitarian and symbolic behavior are both chapters of the same trajectory of cognitive technology;
2) It does not require us to assume that the creation of symbols is the late externalization of a pre-existing symbolic thought, because symbolic thinking and the creation of symbols are the co-constructive result of the development of shared practices and habits;
3) It is fully compatible with the neurobiological characterization of human relational potentialities as instanced by the embodied simulation.

OXFORD

# The Empathic Screen

CINEMA AND NEUROSCIENCE

VITTORIO GALLESE & MICHELE GUERRA

# Thank you!