5° ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΑΝΑΠΤΥΞΙΑΚΗΣ ΨΥΧΟΛΟΓΙΑΣ
20-23/10/2016, Βόλος
Συνθέτοντας το παζλ της ανθρώπινης ανάπτυξης
Γέφυρες με την εκπαίδευση και την κοινωνία

Drawing is a non-verbal language: Illustrations from experimental research studies

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Warm thanks to Prof. Bonoti, the Hellenic Psychological Society, and the University of Thessaly (Volos) for their invitation to this conference

Outline of the talk

1. Some preliminary words about drawing
2. Are children's drawings realistic copies of objects?
3. Drawing is a learned non-verbal language
4. Short concluding remarks

1. Some preliminary words about drawing

1.1. What is drawing?

A graphomotor activity and a cognitive system that permits the graphic expression of concepts (=> drawing conveys concepts through external notations)

- Symbolic & intentional
- Ludic & social
- Typical of childhood

Luquet 1927/2001

Drawing is realistic: it aims to represent what is seen

Baldy 2011; Cohn 2012

Drawing is a learned language, based on conventional graphic signifiers and codes

1. Some preliminary words about drawing

1.2. How to study drawing?

3 levels of analysis:

-SEMANTIC: « What » - product

-SYNTACTIC: « How » - process

-CINEMATIC (velocity, pressure on pen…)

1. Some preliminary words about drawing

1.3. Why studying drawing?

1/ **Drawing is specific to the human mind**

« Many species generate internal representations, but there is something special about the architecture of the human mind that enables children and adults also to produce external notations, that is to use cultural tools for leaving an intentional trace of their communicative and cognitive acts »

Karmiloff-Smith 1992 (in *Beyond Modularity* p. 139)

2/ **Drawing is a core function of human cognition**

« Humans do seem to have an innate capacity for representing concepts graphically. Drawing is as essential to human cognition as other core functions like verbal or manual linguistic systems. It is another avenue for conveying concepts, and its study is embedded into the understanding of human communication, human cognition, and human nature »

Cohn 2012 (*Human Development* p. 188)

An overview of research thematics on drawing (2011-2013)

Picard (2014)

Search in databases for scientific publications (in English) that include the word « *drawing* » in their title, over the last three-years period (2011 to 2013).

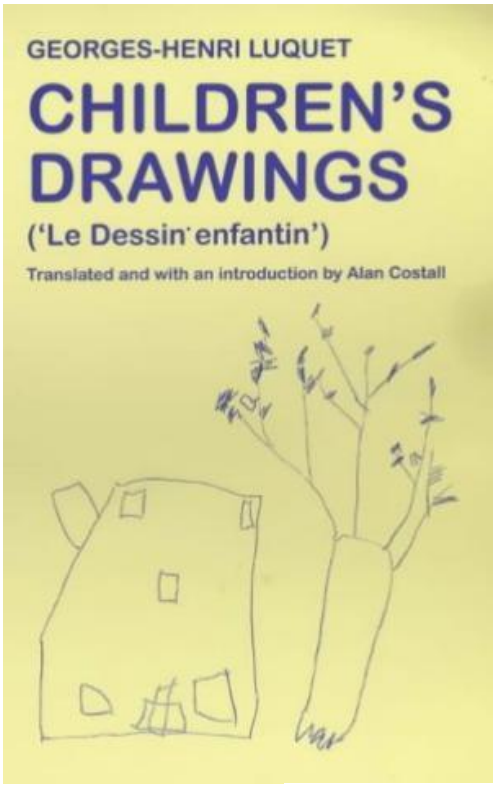
-> **N = 128 articles**

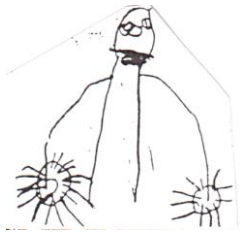
Table 2. Distribution of the corpus of 128 articles by thematic and publishing continent

	Europe	North America	South America	Asia	Oceania	Total articles
PROJECTION	4	3	1	11	1	20 (16%)
EDUCATION	5	4	-	2	1	12 (9%)
PATHOLOGIES	21	14	3	9	1	48 (37.5%)
MECANISMS	27	15	-	6	-	48 (37.5%)
Total articles (%)	57 (45%)	36 (28%)	4 (3%)	28 (22%)	3 (2%)	128 (100%)

2. Are children's drawings realistic copies of objects?

The commun view : Along the lines of **Luquet (1917/2001)**, we have considered that when children draw they try to copy reality the best they can…





1. Fortuitous realism

2. Failed realism

3. Intellectual realism: children draw « what they know » about reality (« object-centred » drawing)

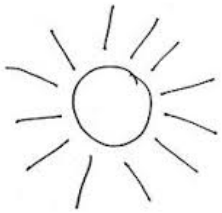
4. Visual realism: children draw « what they see » about reality (« view-centred » drawing)

2. Are children's drawings realistic copies of objects?

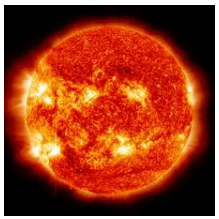
2.1. « Similarity » between drawing and reality is low and conventional

Figure 1.1 Cartoon by Kevin Woodcock. (Reprinted, with permission, from The Best of Private Eye. London: Quartet Books, 1975.)

Graphic signifiers

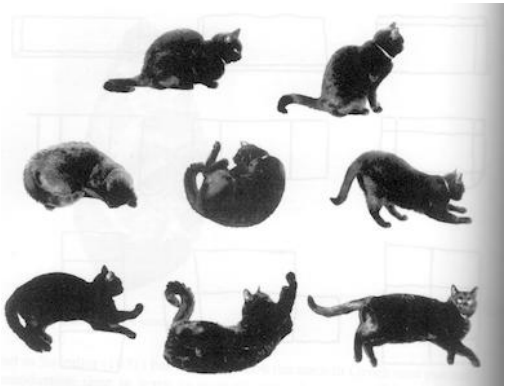


Referents



Drawing of a cat by a child

Photographs of a real cat:
Do cats have a shape?



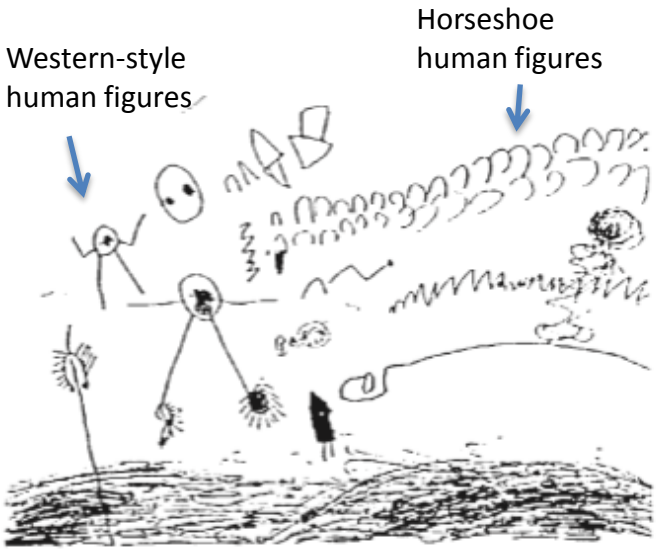
All these are human figure drawings

Baldy (2009)

A. « Jimi contour » (Martlew & Connolly, 1996)

B. « Half moon » (Wilson & Wilson, 1984)

C. « Horseshoe » (Cox, 1998)



2. Are children's drawings realistic copies of objects?

2.2. We don't see what it is (retinal picture) but what we know (mental construct)

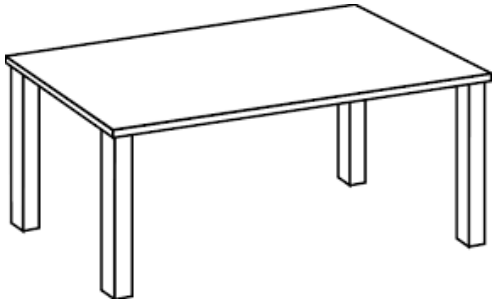


Table or table components.

Lee (1989): errors in copying line drawings of a table are directly related to the knowledge that the lines represent a table, and not to difficulty in drawing the lines themselves.

2. Are children's drawings realistic copies of objects?

2.3. Children's drawings are sometimes « object-centred », sometimes « view-centred », depending on the context

Drawing objects with hidden feature

Freeman & Janikoun (1972) :
« Canonical error »

High contextual permeability:

- Pairs of objects **(Davis, 1983)**
- Wording of instructions **(Beal & Arnold, 1990)**
- Communication game **(Light & McEwen, 1987)**

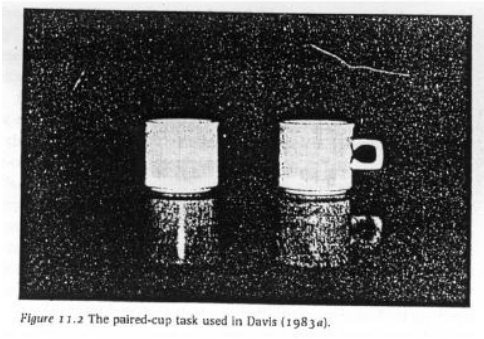
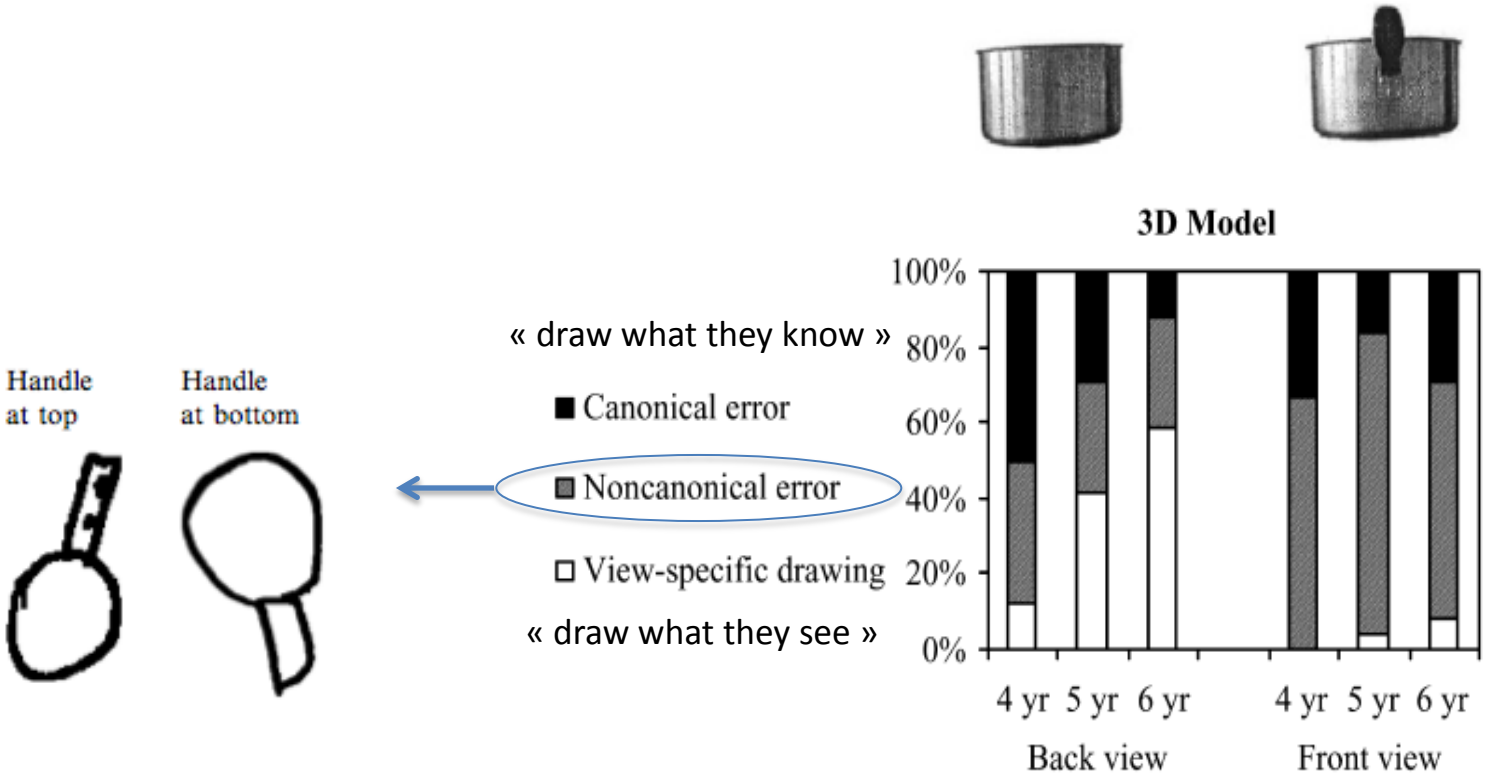


Figure 11.2 The paired-cup task used in Davis (1983a).

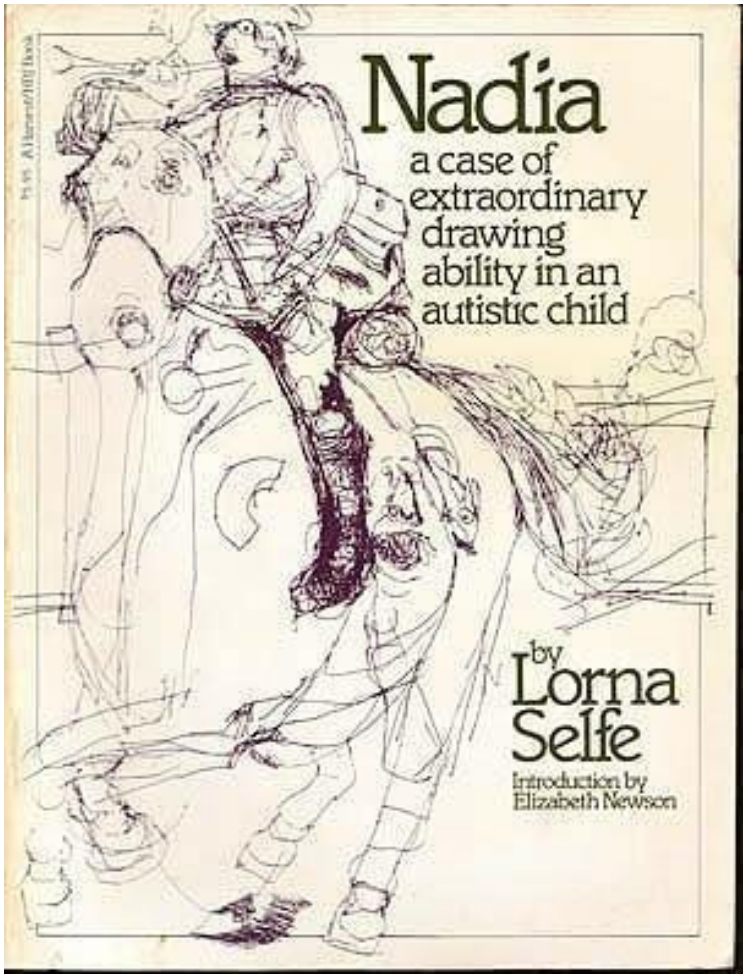
Children draw « in-between » what they know and what they see of objects in atypical orientation

Picard & Durand (2005)



2. Are children's drawings realistic copies of objects?

2.4. Only extraordinary people (with photographic functioning) can draw realistic drawings



Stephen Wilshire « the human camera »

3. Drawing is a learned non-verbal language

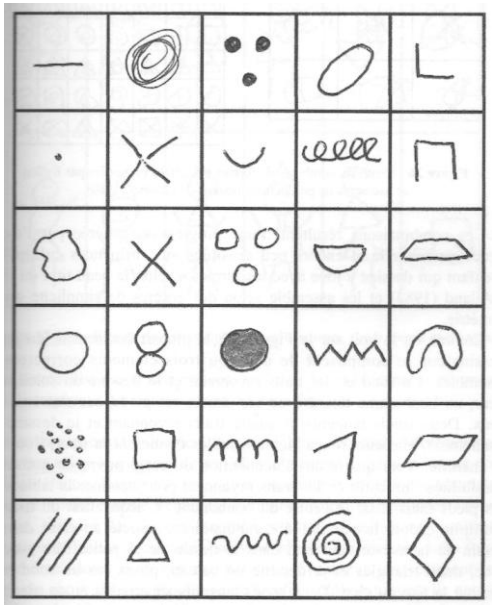
<u>The alternative view</u>: When children draw, they don't try to accurately represent the way things look in the world. Instead, they learn to draw by imitating the graphic schemas available in their culture (**Baldy 2011; Cohn 2012).**

Making sense of graphic languages is not « natural », but requires learning relations between graphic signifiers and referents

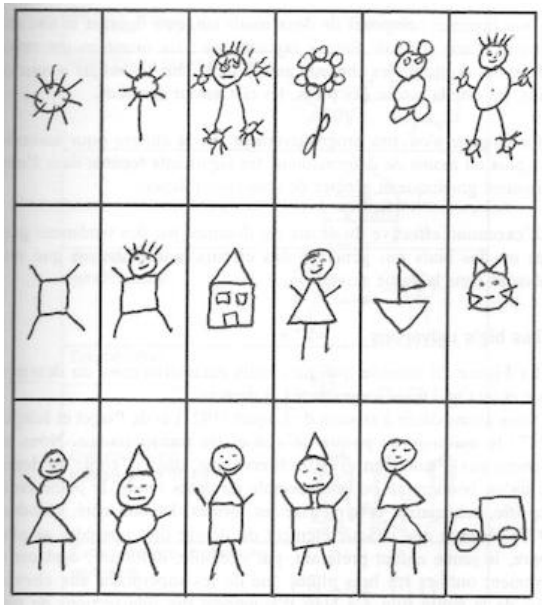
3. Drawing is a learned non-verbal language

3.1. Graphic signifiers come from scribbling, like words from babbling

Drawing evolves from **scribbles** … to **basic shapes and lines** (the « graphic repertoire ») … …. to **constructional drawings** (combination of basic shapes and lines) … to **more stylized drawings** (inspired by cultural models)



« Graphic lexicon »
(≈ 30 units by age 6)



Combination of polysemantic graphic signifiers

3. Drawing is a learned non-verbal language

3.2. Children learn to draw by studying graphic pictures in their environment

Cohn (2012, p. 180):

« The process of drawing development involves acquiring and producing graphic schemas, just as the acquisition of language involves acquiring the lexicon and grammar in a child's environment. »

« Drawing development involves the acquisition of schemas through imitation »

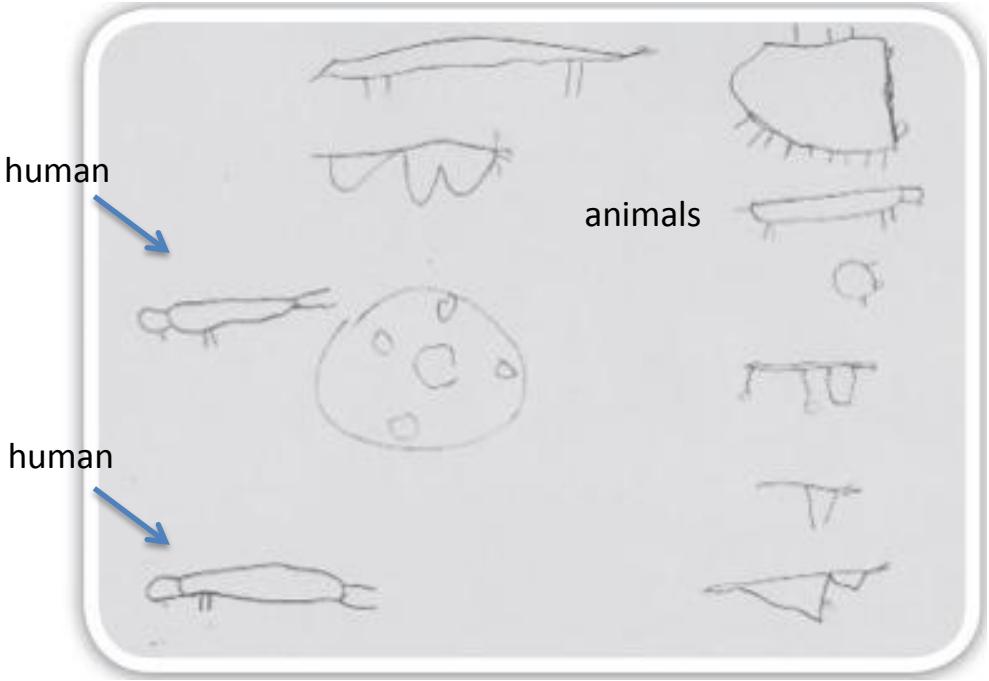
⇒ Differences in graphic fluency observed between cultures

⇒ Differences in drop-off in drawing development

Drawings by preliterate people are poor: Example with Himba people in Namibia

Andersson & Andersson (2009)

First-ever drawings (Man, 25 yrs)



Drawing is enhanced by a stimulating context: Example with Chinese children (vs. Euro-American children)

Huntsinger et al. (2011)

Drawing skills

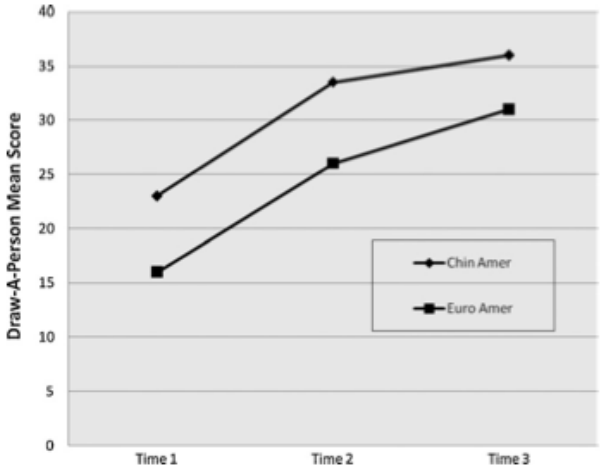


Fig. 2. Cultural differences in Draw-A-Person scores over time.

Drawing creativity

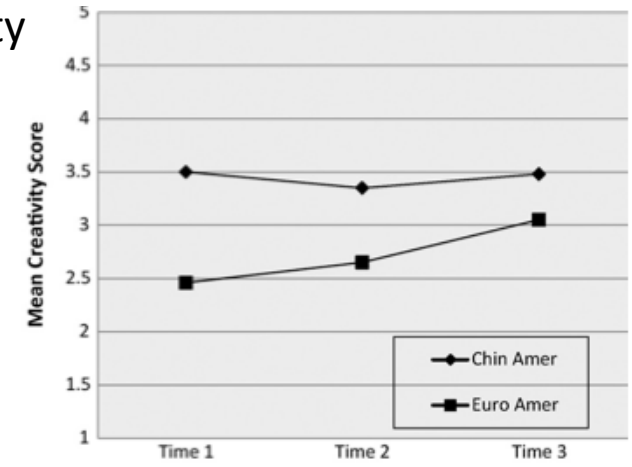
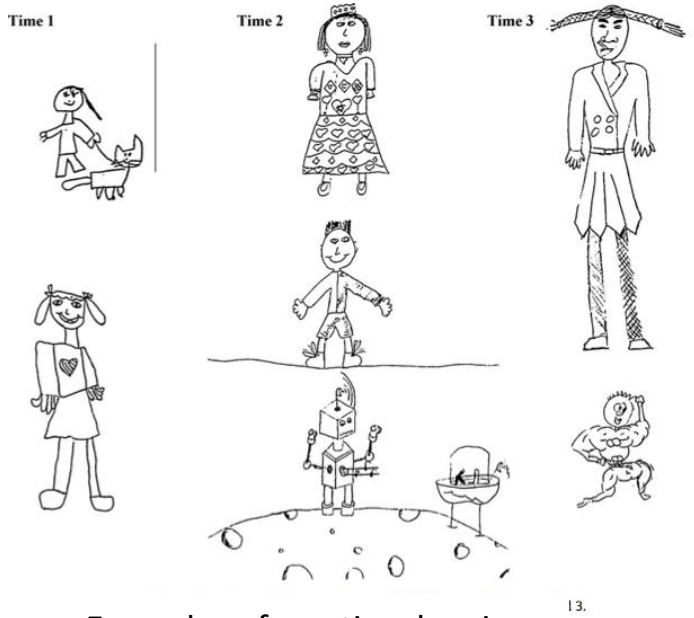


Fig. 3. Cultural differences in drawing creativity ratings over time.



Examples of creative drawings

=> Imitation fosters drawing development and creativity for drawing

Differences in drop-off in drawing development

- Greece

Bonoti & Metallidou (2010): decrease of feeling of liking of the drawing with age

- England

Rose, Jolley & Burkitt (2006): occupation and enjoyment in drawing decline with age

- France

Baldy (2002): drawing often disappears at adolescence with no further improvement in graphomotor capabilities

- Japan

Toku (2001): Comics provide Japanese children with a consistent visual vocabulary to imitate. As a result, they have greater proficiency in drawing than American children and an absence of a drop-off in drawing development.

3. Drawing is a learned non-verbal language

3.3. Children's drawings are shaped by cultural habits in reading and writing verbal language

(a) Drawing familiar objects involves preferred profils/directionality.

Picard (2011)
study with French children

Walking dog

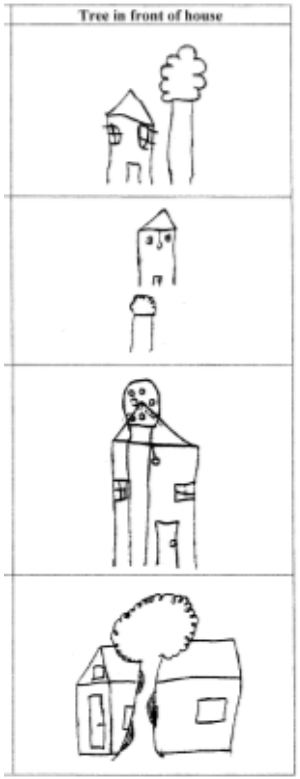
Facial profile

« left profil »

(b) Drawing one object behind another is governed by « graphic rules »

Vlachos & Bonoti (2004)
study with Greek children

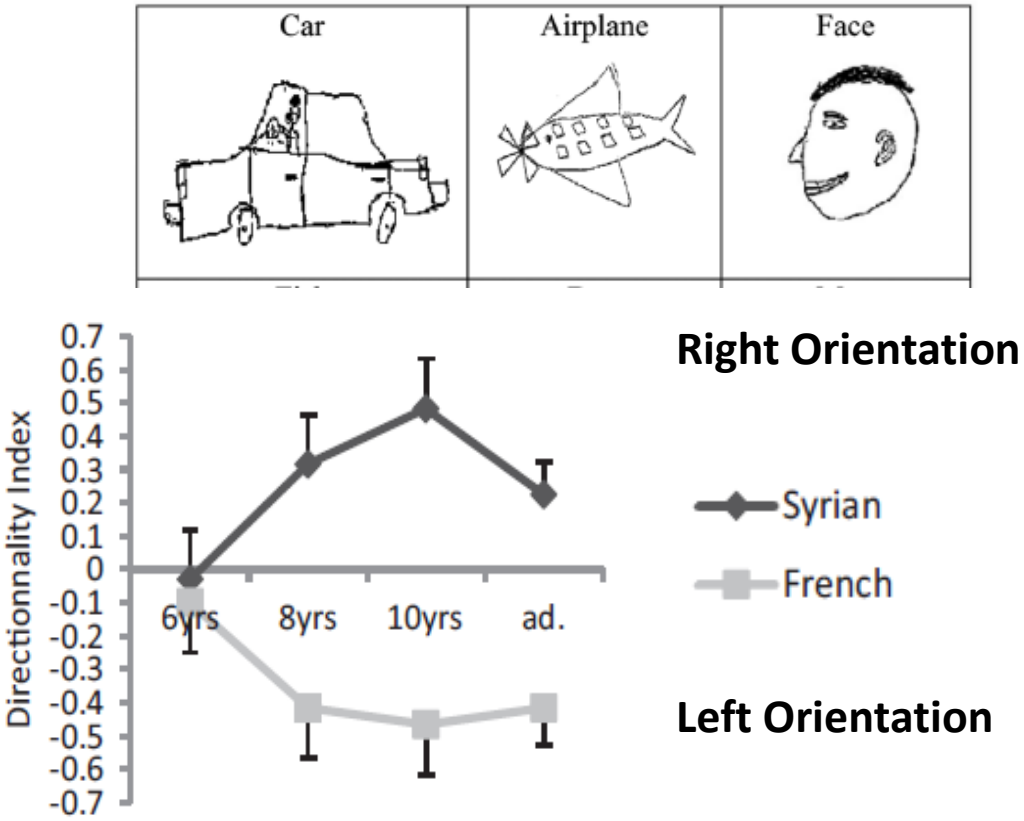
« the vertical/oblique rule »



(congruent with left to right reading/writing habits)

Drawing directionality varies according to cultural reading habits

Kebbe & Vinter (2013)



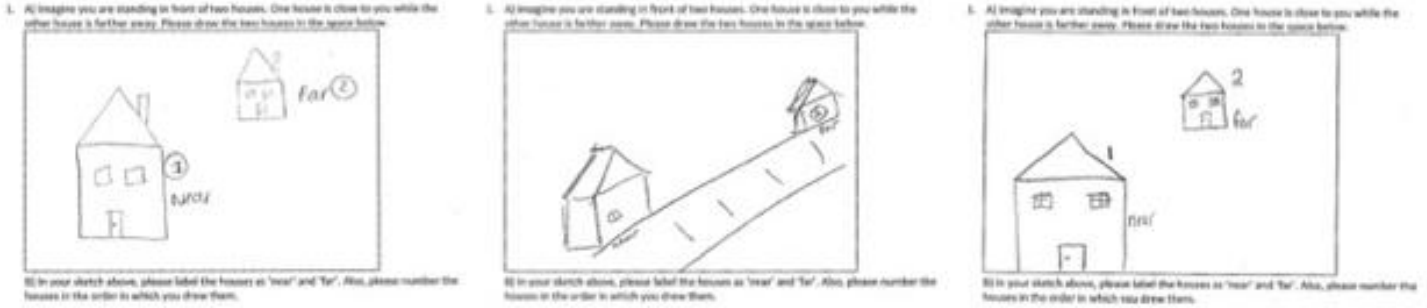
D index = nb Right – nb Left / total nb drawings

The vertical/oblique rule varies according to cultural reading habits

Vaid et al. (2011)

Imagine looking at two houses, one that is near and the other far

American Participants (LR group)



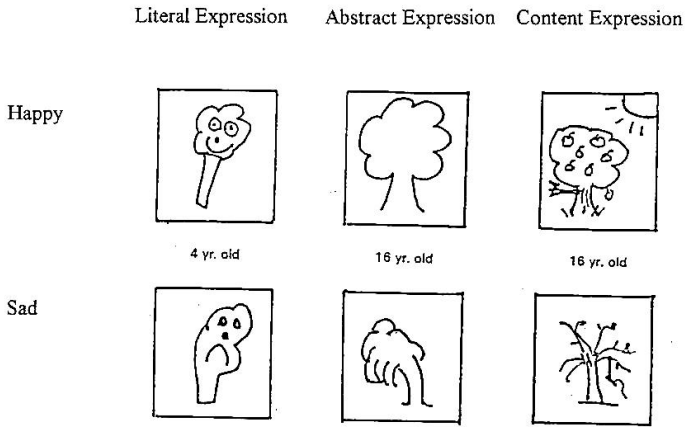
Arabic Participants (RL group)

3. Drawing is a learned non-verbal language

3.4. Children use specific strategies & graphic cues to draw expressively

(a) Drawing happy/sad drawings

- Literal and metaphorical (abstract, content) strategies



Ives (1984) American children

Picard et al. (2007, 2011, 2012) French children

Misailidi & Bonoti (2014) Greek children

(b) Depiction of human emotions

- Facial, postural and contextual graphic cues

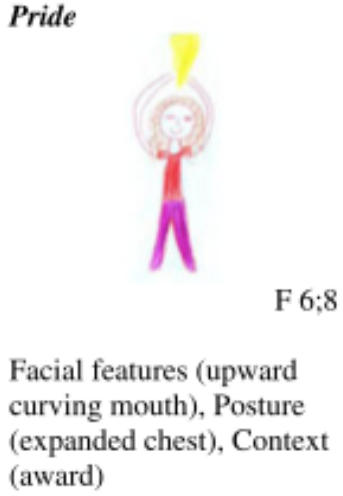
- Basic emotions

(happiness, sadness, fear, anger, disgust, surprise)

Brechet et al. (2007, 2009) French children

- Social emotions (jealousy, shame, pride)

Bonoti & Misailidi (2015, 2016) Greek children



Size variation (abstract expression) is not « intuitive »: It has to be learned as a cultural code

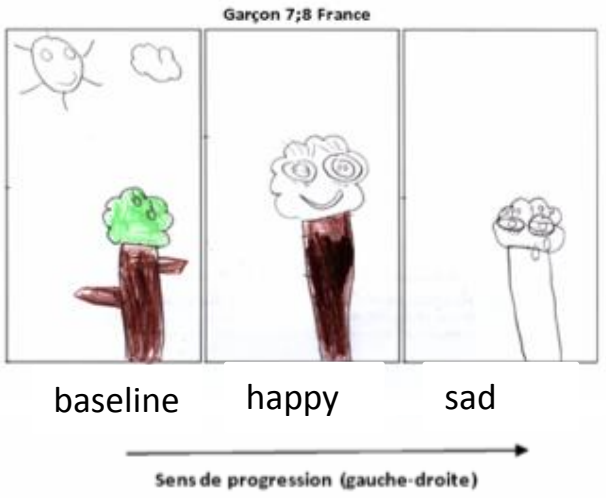
Picard & Lebaz (2010): French children aged 5 years did not change the size of their drawing(tree) according to emotion (happy/sad). Height variation was observed in older children (from age 7) and in adults.

Picard, Zarhbouch et al. (2013): Unlike French children, Moroccan children (7-11 years) never changed the size of their drawings (tree) according to emotion (happy/sad).

Moroccan drawings

French drawings

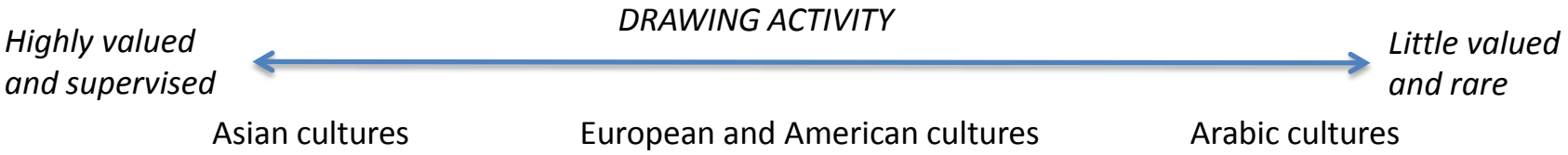
Context cues (content) + facial features (literal)



Height variation (abstract) + facial features (literal)

4. Short concluding remarks

- Drawing is a language that children learned by imitating the graphic schemas available in their culture.
- A cross-cultural approach of drawing is relevant if we want to gain a more complete (less egocentric) understanding of drawing development.
- There is variation across cultures in they way they value drawing behaviour.



What may be interesting for fundamental research is to ask :

Why is there variation?

(What is the adaptative value of such differences?)

Thank you for your attention!