

Neuchâtel, Swiss Society of Psychology, 19-20 August 2009
Symposium "Social interactions in learning"

"Socio-cognitive conflict"

A concept to bridge major theories of cognitive development

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Socio-cognitive conflict in past perspective

When this concept was first introduced by Doise, Mugny and Perret-Clermont in the '70, it was at the crossroads of :

- Piaget and Inhelder : “cognitive conflict”
- Vygotsky: interiorisation of social coordinations
- Mead: coordination of gestures and symbols with Alters
- Cognitive dissonance theory
- Moscovici: minorities and social influence
- Progressive education (self-government, group work, etc.)

An example

We have observed that in certain circumstances children are likely to learn from each other even when they are both novices.

For example, if they engage in an activity such as sharing juice in glasses of unequal sizes, they tend to start disagreeing about the quantities involved. But **by confronting their point of views** they sometimes end up with a better understanding of the concept of quantity.

They have experienced a *socio-cognitive conflict* that has produced some learning.

Socio-cognitive conflicts in present perspective

Now, all of these research traditions have moved ahead. The cross-roads that we will consider *in this presentation* has been enriched by:

- Duveen & al. on the difference between interiorisation and internalisation of learning
- Bruner: formats, scaffolding
- Rogoff & other North American post-vygotskians on cognitive apprenticeship
- Trognon & others on conversations as matrices of the mind
- Markova, Linell, Grossen & others on dialogical approaches
- Valsiner, Zittoun, & others on symbolic mediations
- Osborn, Schwarz, Pontecorvo, Rigotti & others on argumentation in education
- Cole, Rubtsov, Säljö, Engeström & others on tools, mediations and activity theory

Two questions/wishes will remain open:

- how to bridge with social influence and Mugny's model?
- these processes within the complexity of classroom management

Socio-cognitive conflicts are likely to elicit learning and cognitive development....

Yes, indeed!

But not always...

. role of the partner, setting, tasks, social representations, social marking, gender asymmetries, affinities, goal motivation, framing by the adult, etc. !

. prerequisites at the psychological level, meaning attributed by the participants, personal investment, etc.

Joint actions and conversations are situated and mediated by tools and rules.

The **same joint activity** has very often **different meanings** for the **different actors** with different **goals** and **past experience**.

In collaborative action, and in particular in conversations, two processes can be observed: the exchange and construction of:

- **knowledge**
- and of **meaning**.

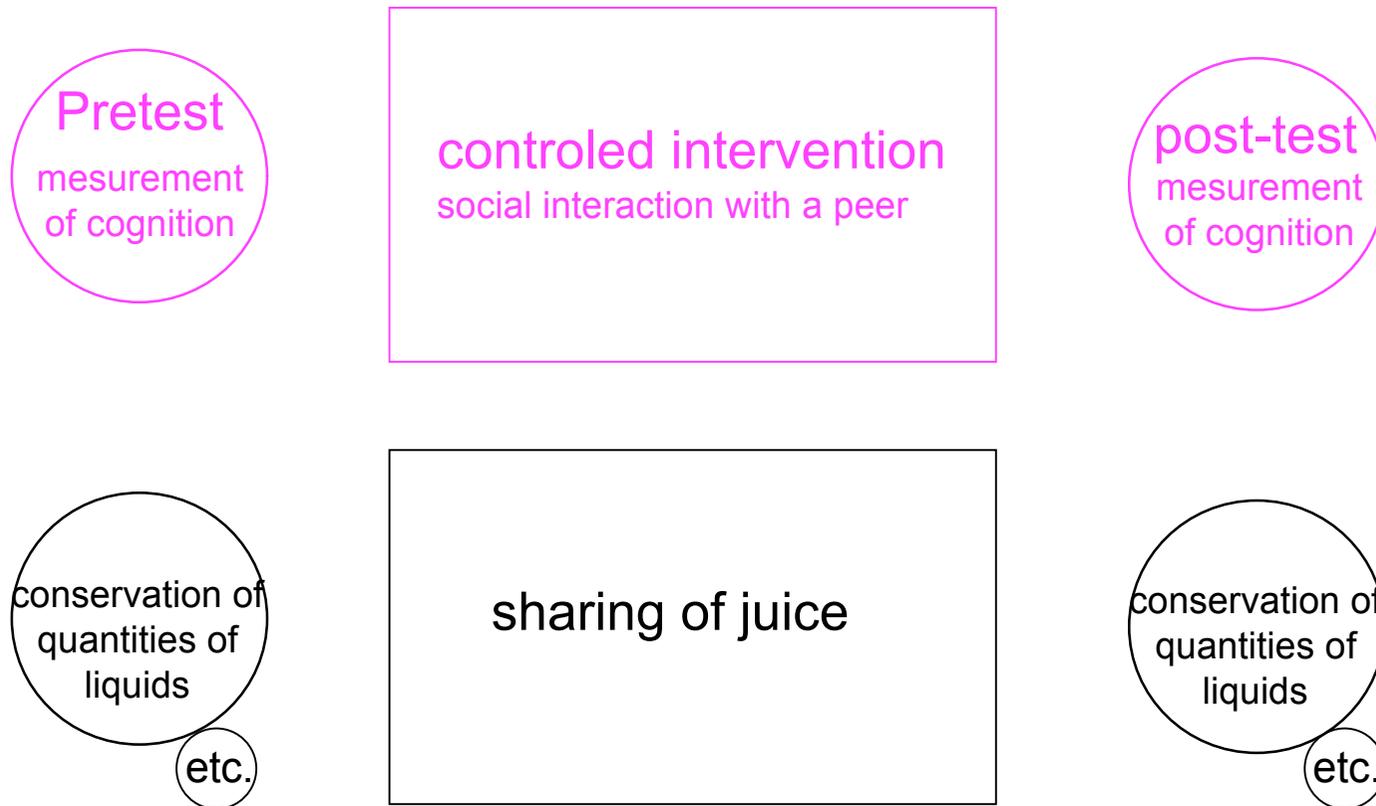
**Circumstances cannot directly "cause" cognition.
So, what is it that happens?**

***Can the « black box » be opened and the processes observed at work?
==> paradigm shifts: from the study of effects to the study of processes***

1st generation paradigm

(Line 1, type A)

Social effects on cognition: the social as « independent variable »



Doise, Mugny & Perret-Clermont, 1975; Perret-Clermont, 1976, 1996; Doise & Mugny, 1994; Carugati & al. 1979; Perret-Clermont & Schubauer-Leoni, 1981 etc. Cf. Ames & Murray, 1982; Psaltis 2005; Schwarz & Linchevsky, 2007)

1st generation paradigm

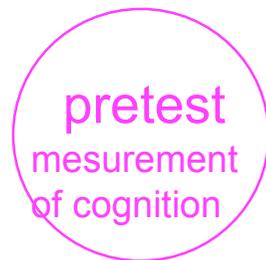
(Line 1, type B)

The « independent variable » interacts with another « independent variable »: the « social context »

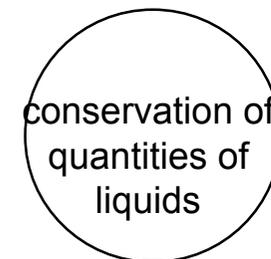
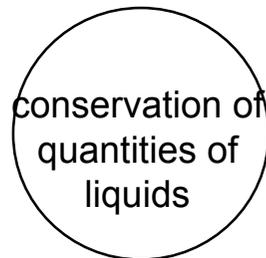
general model:

independent variable
“context”

independent variable:
“social interaction”



an example:

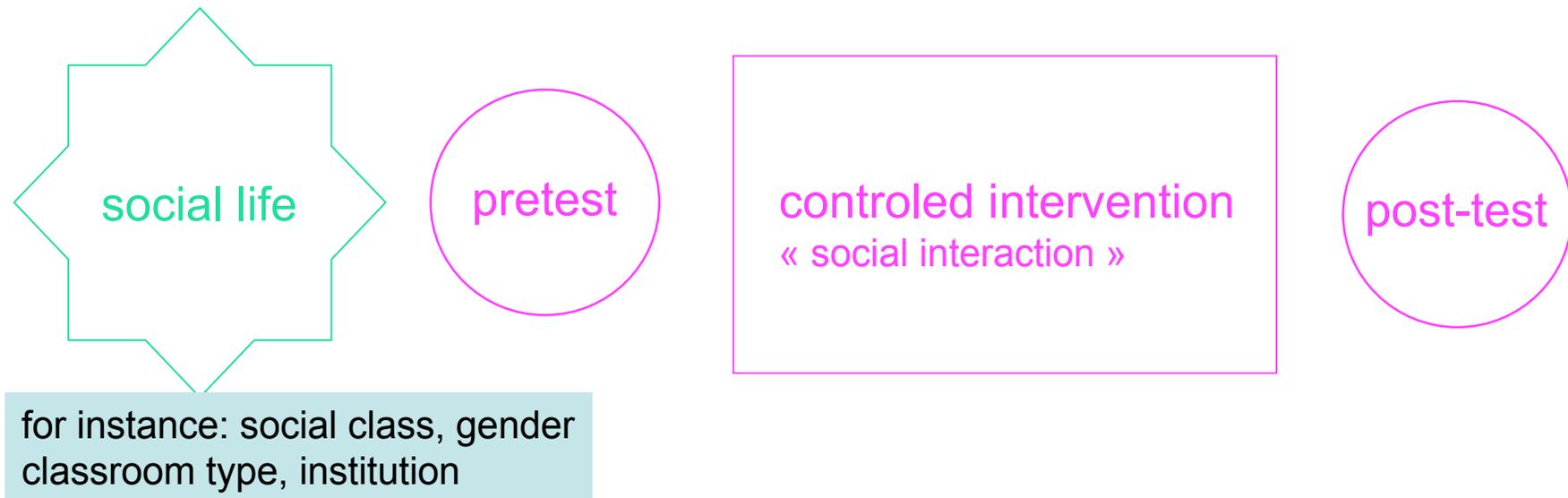


Cf. Perret-Clermont & Nicolet, 1988/2001; Nicolet, 1995

1st generation paradigm

(Line 1, type AB)

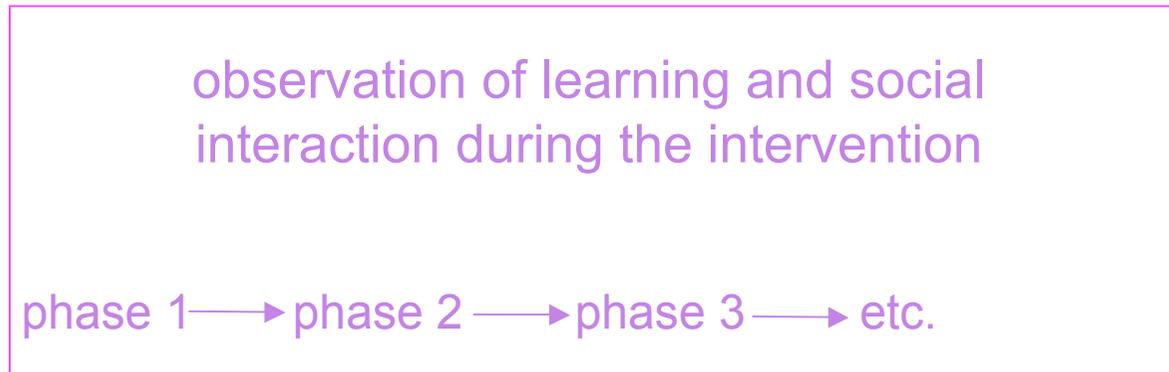
The « social context » considered as an invoked « independent variable »



Perret-Clermont 1976/96; Mugny & Perret-Clermont 1985; Schubauer-Leoni 1990; Iannaccone 1993;
Säljö & Wyndham, 1988 Psaltis, 2005

2nd generation paradigm (= Line 2)

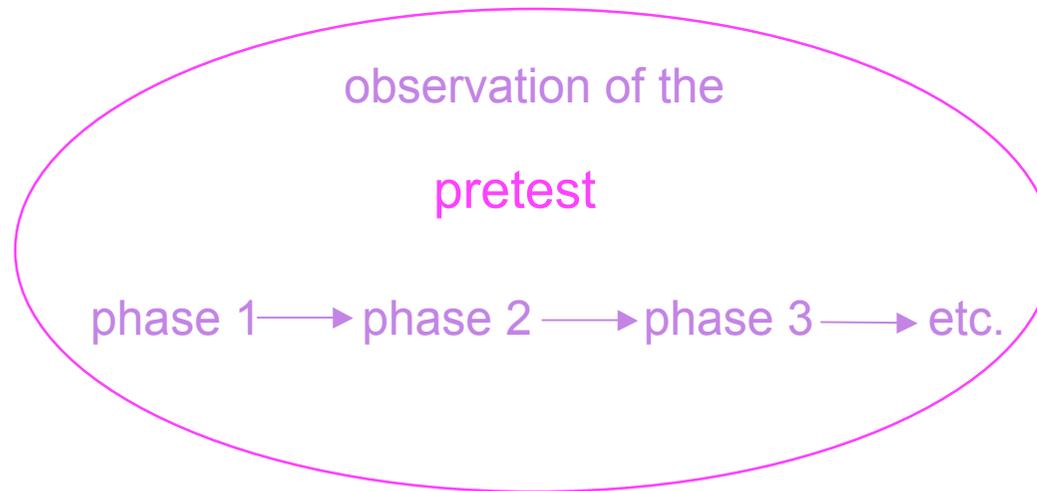
**Opening the black box of the « social interaction » as
an « independent variable »**



Perret-Clermont, 1979, Marro, 1999, Muller Mirza 2001 et 2005,
Tartas & al. 2004 & 2008.(Cf. Wertsch, Rogoff, Forman, etc.)

Revisitation of the pretest: it is also an intervention!

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Grossen, 1988, Perret-Clermont, Schubauer-Leoni & Trognon, 1992,
Marro, 1999.

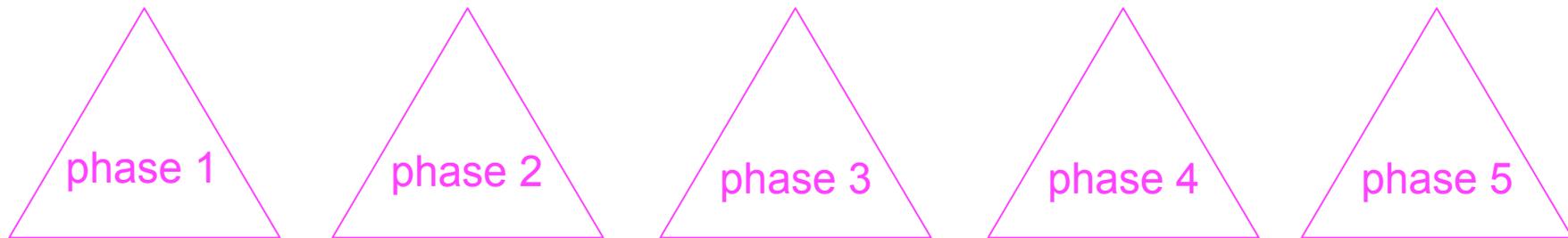
Conclusion: interdigitation of the social and the cognitive. Socio-cognitive processes rely upon the subjects active interpretation and meaning construction starting from the pretest.

3rd generation paradigm

(Line 3)

« micro-histories »

The « variables » are not « independent »: they mutually define each other as the subjects interpret them all along the interactions. Neither thinking nor context are static realities.



for instance:

indiv.pretest

competitive game

sharing juice

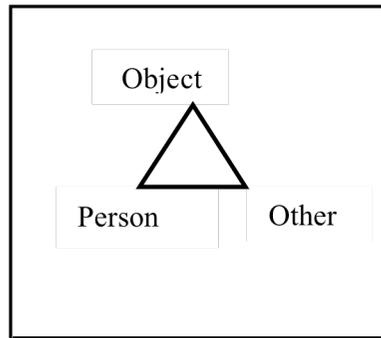
post-test 1

new sharing

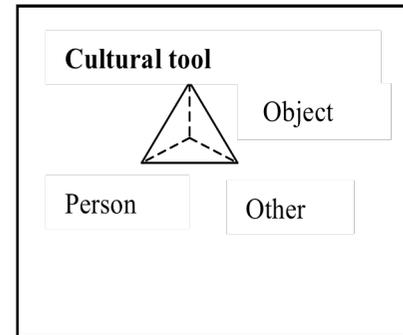
The question of transfer

from phase to phase, setting to setting, object to object, partner to partner

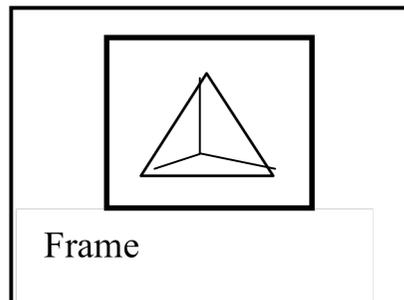
Psychosocial triangle



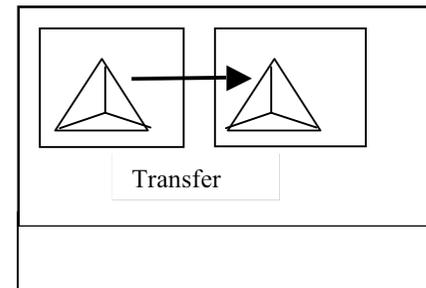
Semiotic prism



Frame



Transfer



Zittoun & Perret-Clermont, 2009.

Research questions from a psychological point of view:

How and why is

- the quality of the **internalisation/interiorization** and transfer of what has been learned
- the **use** of what has been learned
- and the **transmission** to another person of what has been learned

dependent on the social conditions of its acquisition and reproduction? on the “micro-history” of the learner?

the results can have interesting theoretical and educational implications

An experimental design to study “micro-histories”

- Nicolet, 2005
- Grossen & al. 1993
- Tartas & Perret-Clermont (2004, 2009, in press).

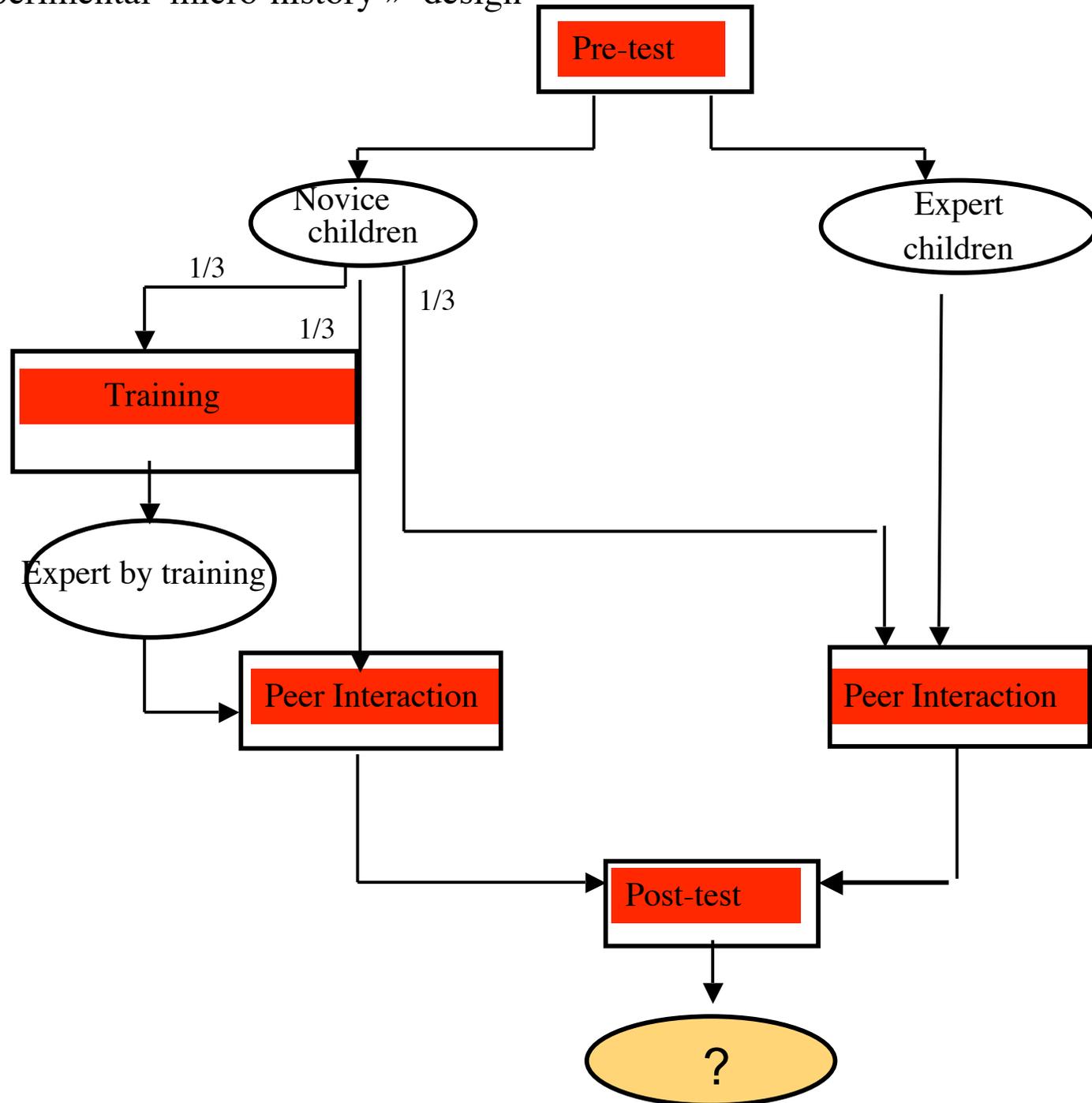
Figure 1: « Experimental micro-history » design

Phase I

Phase II

Phase III

Phase IV



Grossen's results

Peer interaction:

Spontaneous

Adult's teaching:

The adult taught strategies to the novices by **demonstration and verbalisation.**

Learning results

- the children who had learned with the adult and then interacted with novices shared knowledge efficiently.... but regressed on the post-test!
- the novices who had interacted with them progressed the most!

Grossen's results

=> A study of regression as much as a study of learning!

Adult taught children loose more often their knowledge when they interact!

(i.e. lower quality of interiorization)



Isidor's training



Tartas and Perret-Clermont's results

Peer interaction:

Spontaneous

Adult's (« vygotskian ») teaching:

- adjusts to the child when suggesting the use of (academic) concepts and more advanced strategies gives -
- helps only when needed
- grants agency to the learner
- grounds the explanations in the child's activity

Learning results

- adult trained children did not regress anymore
- quite varried!

Two examples of so different cases even if instructions and tasks were the same!

- *Case 1 Isidor (adult trained) and Francis (novice):*

Isidor takes all the initiatives, talks to demonstrate the way he proceeds using the (academic) concepts used by the adult. Progressively he comes to master words and task better.

But Francis, feeling left out, finally comes in declaring: “aren’t we supposed to work together ?” and then the dyad enters in a very systematic division of labour.

Result: on the post-test Isidor progresses a lot, Francis not.

- *Case 2 Henry (adult trained) and Michael (novice):*

Henry imitates the adult in asking questions and giving explanations, vocabulary and strategies, but incorrectly. He grants Michael opportunities to take initiatives and finally it is even Michael who reminds Henry of the procedures that he had suggested following and is not complying to.

Result: on the post-test Henry does not progress much (poor internalization) but Michael progresses a lot (deep interiorization) - and even surpasses Henry!

Case 1 Isidor and Francis:



Case 2 Henry and Michael



Conclusions (1)

-Instructions and task do not define the situation.

-An experimental condition is not a fixed context. It is a dynamic encounter in which the participants interpret roles and task. As a consequence, they create a different context for their partner and themselves. And engage in different learning activities. With different consequences.

-This allows either:

 simple internalization of the semiotic means offered

or

 more profound learning with interiorization and thinking at a higher level.

Conclusions (2)

1) Learning and thinking appear as the collaborative result of *autonomous* minds:

- . *confronting viewpoints and cultural artefacts* (concepts, strategies, etc.)
- . trying to *manage differences* in their perception of status, social role
- . interpreting differently the goal of the activity and the relationship

As a result their transfer different experience from one testing or training situation to another.

2) Researchers have to care not only for the objective definition of an experimental condition, but also and a subjective description of task and setting

Thank you for your attention!