

INNOVATION AND CITIZENSHIP

A PROJECT FOR 'GROWTH OF KNOWLEDGE'
IN PRIMARY AND SECONDARY SCHOOLS

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P₁: The need for innovation and citizenship

Both the advanced late-modern countries of the West and the less developed countries of the Third World seems to be in need of both innovative citizens and an attitude of citizenship.

Innovation is needed to meet the intellectual demands of production and by that the material demands of the population.

Citizenship is among other things needed to knit together societies under pressure from low participation in the democratic processes, the influence of fundamentalist ideas or severe economical burdens.

TT #1: The critical rational approach to didactics

$$P_1 \rightarrow TT \rightarrow EE \rightarrow P_2$$

This innovative process of 'growth of knowledge' I see as a clear parallel to the democratic process of furthering (political) ideas, critically having them to clash in elections and parliaments and always give way for new governmental powers due to this process.

Seen in this way it not only fulfil the aims of the educational system to clear the road to knowledge for its students and to train them in innovative skills.

It also educate the students in basic democratic – and to me this equals humanistic – attitudes.



TT #1: Trust is needed

Trust is needed in $P_1 \rightarrow TT \rightarrow EE \rightarrow P_2$

Without trust in the classroom the critical approach will not work
– openness will not come by, nobody will dare to state a claim
frightened to make a fool of him or her self.

Trust is created by $P_1 \rightarrow TT \rightarrow EE \rightarrow P_2$

Through the training in the critical approach, and by experience
or observation in the approach implemented in the classroom,
students will develop the attitude of mutual trust.

TT #1: The problem of World 3

World 3:

“problems, theories, and critical arguments...and...tools, institutions, and works of art” (Popper 1974: 149)

“the world of the logical *content* of books, libraries, computer memories, and suchlike” (Popper 1979: 74)

Popper claims that:

“our conscious objective knowledge (world 2 knowledge) depends upon world 3, that is to say on (at least virtually) *linguistically formulated* theories” (Popper 1979: 74)

TT #1: The problem of World 3



Old-fashioned teaching more or less tried to transfer knowledge from World 3 to World 2 – from the brain of the teacher to the brains of the pupils for them (maybe) to use it in contact with World 1.

TT #1: The problem of World 3

But how does this work in popperian-inspired learning processes?

Is it necessary for a pupil in grade 5 to have *a priori* knowledge of World 3 theories to put forward a hypothesis?

Will she have to study the relevant World 3 knowledge – and in that way return to traditional teaching processes?

Will she have to confront her resulting theory after EE with the already existing theories of World 3?

How actually is World 3 knowledge constituted – as stored facts and theories to be learned by heart, or as frames or schemes or ways of thinking that can guide the formulation of hypotheses, or both?

TT #2: Citizenship

“Popper is, of course, a moral philosopher and a humanist.

This is why the educational importance of Critical Rationalism may not be reduced to philosophy of science and its resulting social technology.” (Pollak in Zecha 1999, p. 132)

Bildung as understood in the German/Scandinavian tradition – from Kant, over the German Idealists to today’s Wolfgang Klafki and Dietrich Benner – is one way to avoid the reduction to instrumentalism.

Popper points to a development of Plato for an answer:

TT #2: Plato in *The Republic*

Plato argues in order to 'sell' the idea of *The Republic* that:

individualism equals egoism
collectivism equals altruism

Popper on the contrary argues in *The Open Society* (Popper 1973 vol. 1: 100) that one can also cross-connect the concepts. This leaves us with four combinations:

individual-egoism
individual-altruism
collective-egoism
collective-altruism

Made into a matrix it looks like this:

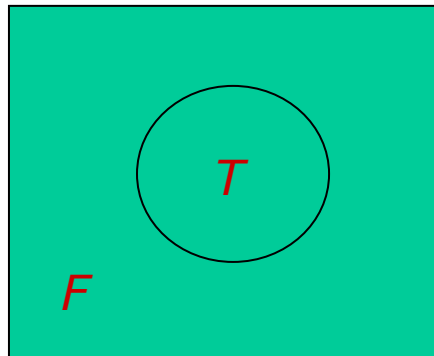
TT #2: The Matrix

	Individualism	Collectivism
Egoism	1	2
Altruism	3	4



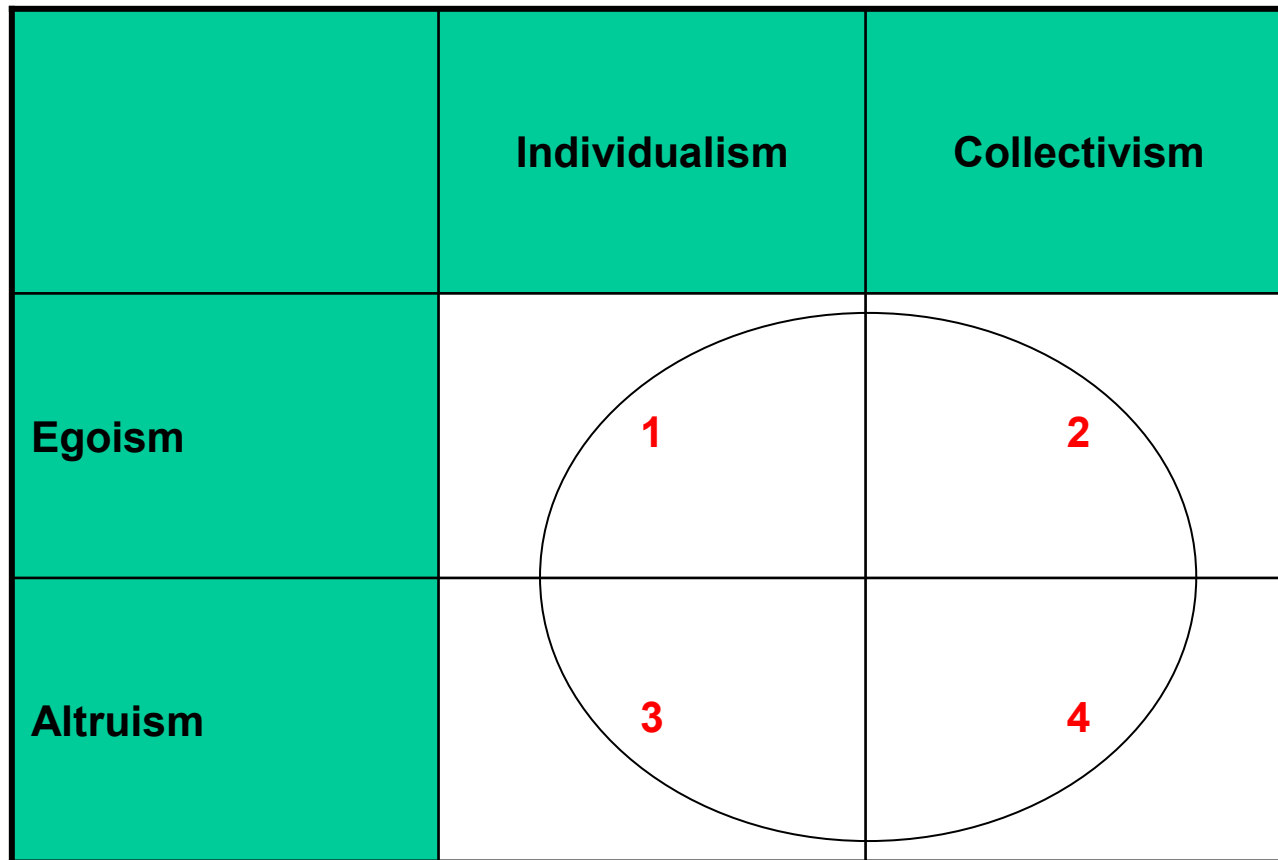
TT #2: The Matrix

As an illustration verisimilitude and the search for truth Popper (Popper 1979:54) draw a square representing the class of all statements, and divide it into two sub-areas: true statements (T) and false statements (F):



For Popper, the point is “metaphorical speaking, to cover by hits as much as possible of the target (T) of true statements, by the method of proposing theories or conjectures which seem to us promising, and as little as possible of the false area (F).”

TT #2: The Matrix



TT #2: The Matrix

Within the circle of tolerance or democracy the pupils or students act with openness towards each other when it comes to putting forward and discussing conjectures for solutions of given problems.

Outside the circle of tolerance making fun of each other, not listening to others arguments etc. will kill the debate (and therefore in the long run also kill the participants!), kill the acquiring of knowledge – and kill the democracy.

Therefore:

Trust is limited by the circle of tolerance

TT #2: A sober combination

On the very last pages of *The Open Society* Popper returns to the concept of the matrix (Popper 1973 vol. 2: 275):

The Romantics took a mix of collectivism and egoism for granted, also in education.

Instead Popper argues for:

a sober combination of individualism and altruism

This could be the *Bildung* of the Popperian education philosophy, including both the autonomy of Kant and the ability of self-governance, participation and solidarity of Klafki.

Teaching in practise: An example

4th grade Math:

The class shall make an enquiry on the use of TV. Individually make up three questions that you think relevant. Debate the questions on the class and choose the best ones. Use them in your enquiry. How will you collect the data?

Innovation: To come up with the questions (hypotheses!)

Presentation and motivation of the questions on the class.

Falsification/error elimination: Choosing the best questions.

Citizenship: You have to let our own suggestions fall in the clash with better ones.

The process focus on the positive, the best questions, not on the negative, the 'wrong' questions!



References

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