Ecosse : Socrates for six years old: theory and practice

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In this paper - "Socrates for Six Year Olds: theory and Practice" - the practise[1] is illustrated with excerpts from the transcript of a video showing young children of 5 and 6 years of age engaging in Philosophical Inquiry [PI].

The paper will begin by explaining how these young children can reason with abstract concepts, and use "formal logical operations" in their thinking as well as being able to understand the thinking of others, and how other people's thinking differs from their own. These abilities are thought to be impossible in young children.

The paper will then describe the origin and development of Philosophical Inquiry and compare and contrast this (McCall) method of PI with Lipman's Philosophy for Children method and Nelson's Socratic Method.

I will discuss the practice shown in the documentary[2] and some theoretical considerations concerning the nature of the Philosophical Inquiry practice in which the five and six year old children[3] are involved.

While engaged in PI the children are empowered by their mastery of reasoning with basic and profound concepts, concepts concerning:

- The nature of reality;
- The nature of thinking;
- The nature of what is moral;
- The nature of what is possible;
- The nature of what is known and can be known.

Such concepts underlie most of what is important in human life.

But why would we **want** children to be able to reason? Surely this is not the way children think "naturally"? Aren't we going against their natural forms of thinking? There are many who would use this argument (I will call it the "unnatural" argument) as a reason to deny children the opportunity of engaging in PI. While philosophical reasoning may not be 'natural' to children (and what would count as natural one may ask?) I would argue that for two reasons this is not a persuasive view: firstly philosophical reasoning is slightly less unnatural than reading and writing, yet those who caution against philosophical reasoning for children do not advocate illiteracy as being suitable for children; secondly the "unnatural" argument assumes that adult thinking is somehow inappropriate for children. But this in itself assumes that adults and children are different in kind, which is a philosophical assumption in itself.[4]

There are three main reasons why we should wish children to be able to reason philosophically: because it is beneficial to them as individuals; because children being able to reason will benefit society as a whole - in particular in the functioning of democracy in any society; and because reasoning is the best defence that people have against the rise of tyranny.

We ought to want children to be able to reason philosophically because this ability will benefit them as individuals - "... the unexamined life is not worth living..."**5**

Philosophical reasoning empowers children.

Philosophical reasoning gives children the means to access education.

Philosophical reasoning gives children the means to make good use of the resources available to them**6**.

Philosophical reasoning gives children more control over their futures.

In order to live a fully human life an individual need to be able to reason.

We ought to want children to be able to reason, as this will benefit society as a whole - in particular in the functioning of democracy in any society. Just as Friere so powerfully argued that literacy is vital for effective and free democracy, so one can argue that in an even more fundamental way reasoning skills are essential to a vital democracy. If we wish to have free democratic societies in which people can be active and effective citizens, then now more than ever reasoning skills are needed. By reasoning skills I mean not just analytic thinking skills, or creative thinking skills, but something more complex. Reasoning is a moral activity - to be reasonable is a virtue rather than character trait**7**, and it is a virtue which can be taught and learned.

Reasoning is important because it is the major defence people have against the rise of tyranny.

The desire to control people, in other words Tyranny, appears in many guises

From fundamental religious ideology to PC strictures on what you are allowed to say.

Moreover increasingly in this world people are susceptible to rhetoric:

- Commercial rhetoric;
- Political rhetoric;
- Religious rhetoric, (even) lifestyle rhetoric**8**.

Almost all rhetoric is aimed at creating conformity because an **unquestioning** population, or group of followers, or class of student's is easier to control.

So we should wish children to be able to reason for the future and present safety and freedom of society, as well as for its benefits to individual people.

Given that it is desirable that people are able to reason, why should this be philosophical reasoning? I would argue that Philosophical reasoning is vital because:

- Philosophical assumptions underlie all thinking;
- Thinking underlies judgment;
- Judgment precedes and informs action
- And
- Faulty thinking leads to bad judgment;
- Bad judgement leads to bad action.

Where the philosophical assumptions, which underlie thinking, are unexamined, essentially people do not know all what lies at the root of their actions.

To defend the community whether local, national or international from Tyranny or exploitation it is not enough to have good intentions. To be an effective citizen a person needs both thinking skills and the disposition to use their skills. In fact a person with good intentions and without the skills is more open to manipulation than the person with no desire to be a good citizen.

To be an effective citizen a person needs to be able to make reasoned judgments concerning the views of others, and needs to be able to modify her views if necessary. This requires comprehension skills, which in turn requires:

- Skill in analogical reasoning;
- Skill in recognizing and evaluating analogies;
- Skill in identifying assumptions;
- Skill in recognising fallacies;
- Skill in being careful about jumping to conclusions;
- Skill in recognising part/whole relationships;
- Always being aware of alternatives;
- Skill in seeking out consistencies and inconsistencies in every sphere of life.

These skills are important in everyday life.

For example when a local community meeting is told that there is no scientific evidence that mobile phone masts cause ill health, the inquiring citizen might probe further. Saying that there is no scientific evidence that mobile phone masts cause ill health is not equivalent to saying that there is scientific evidence that mobile phone masts do **not** cause ill health. A concerned citizen who wishes to be effective in taking action needs the thinking skills to be able to make that kind of logical distinction, and to counteract expedient rhetoric, which will place commercial interests above the interests of the community. The statement might simply mean that although people who lived under mobile phone masts were dropping like flies, no- one has done any scientific studies on this

connection and so there is no scientific evidence one way or another. Without both the disposition and the skills to reason a person cannot be an effective and active citizen.

However being rational - using purely analytic thinking skills does not alone ensure good citizenship. Skill in analytic thinking while necessary for effective citizenship is not sufficient**9**.

If democracy as a form of civic organisation (whether local national or in some sense international) depends for its success on reasoning participants, then full democracy requires a reasoning citizenry. Proficiency in reasoning, as in any skill, requires practice. Yet not many people actually learn or practice reasoning. There are many factors which impede the development of reasoning skills, but one of the biggest obstacles to encouraging the development of such skills is the belief that not everyone is capable of reasoning or higher order thinking. Particularly it is assumed by many that children are not capable of abstract thought and of performing formal logical operations.

Our notion of childhood has many roots, but a recurrent feature in the literature of childhood involves a notion of children as non- rational or pre- rational beings. This feature traditionally relies on two strong lines of support. One line of support stems from developmental cognitive psychology, particularly stage maturational theories, which claim that the cognitive capacity for rationality is not present until a person has matured to a certain age, (usually around 11 years old). Hence young children could neither think abstractly, (i.e. using abstract concepts) nor rationality, (using formal operations). These criteria if broadly applied would also exclude many adults from the category of "rational beings".

Since theories of childhood actually affect and sometimes even determine the activities which children engage in, very few children ever have a chance to engage in abstract reasoning.

In my own work with philosophical reasoning it seemed to me that if children did not have practice in this kind of reasoning it would be unrealistic to expect them to be proficient at it. So what would be required in order to find out if young children had the capacity to reason philosophically would be to create the conditions, which would develop this capacity.

I will be arguing that the practice of PI actually **induced** in young children both the skills and disposition to reason**10**.

It is not usual for children to initiate sophisticated reasoning procedures. In tests by cognitive psychologists when tasks which require logical are presented to children they usually fail**11**. But it is not only children who fail to perform or perform "incorrectly". As empirical work by cognitive psychologists has shown adults also fail on tasks which require logical reasoning. (In one famous task - Wason and Johnson-Laird - only 5 out of 128 university students were correct on a task involving hypothetical reasoning.)

However that children do not do x, does not imply that they cannot do x.

For example individuals who have never been in water will likely do badly in tests of swimming, but that does not mean they are incapable of swimming. Similarly young children who are not exposed to reasoning will not do well at reasoning skills, but this does not mean that they do not have the capacity to reason.

Reasoning must develop in situations and circumstances, which are 'natural' environments for reasoning, in the way in which water is the natural environment for swimming. Those situations in which reasoning is called for, rather than say obeying orders, or making arbitrary decisions, or memorising information, would be 'natural' environments in which to find reasoning. An environment which actually calls for reasoning, in the sense that swimming is actually called for when in deep water, would be one in which other forms of thought and behaviour would not be successful. And this is what PI does - it calls for reasoning. It requires participants to engage in philosophical reasoning.

The PI procedures require members of the community:

- To listen to the ideas and arguments of others;
- To present arguments;
- To present counter-arguments;
- To give reasons;
- To evaluate the reasons given;
- To make explicit the relationships between viewpoints or arguments being presented.

Through the experience of the procedures of making relationships between different views clear, members of the group gradually come to realise that contrasting points of view are necessary for the emergence of dialogue. And this is what you see in the transcript (of the video) - the PI method conducting the children into reasoning about philosophical concepts**12**

There are two aspects of the PI dialogue which I would like to highlight in this paper: the movement of philosophical ideas and the logical structure of the arguments. In the following dialogue the children begin their **philosophical**reasoning by establishing that existence is a necessary condition of anything, including thinking and talking. This topic is developed by considering that while existence is a necessary condition of being a person, there are also sufficient conditions to be satisfied: to be a person one must also be able to hear, etc. Then a challenge is made about the conditions of personhood thus far raised - in the form of a counter example from Owen who says that a robot could fulfill those conditions of thinking and moving etc., but a robot is not a person. Kristin reiterates that robots are not people. At this point, I ask how could we know the difference. In his consideration of this question Matthew then raises a new criteria of personhood - that persons are owed moral consideration - you cannot hurt a person.

According to the arguments put forward by the children in this dialogue a robot, although similar to a person in many respects, would be denied the status of personhood on three counts:

- As artifacts they are not subject to moral consideration;
- They do not have the right biological origin;
- They do not possess free will.

A fourth feature of personhood that they consider in depth concerns the kind of thinking which people do. It is suggested that although robots think they do not think in the same way as people. The children give several accounts of how the robot's thinking differs from human thinking. Firstly they explain that "a robot does not know anything it is the person who made the robot that knows". Owen then disagrees saying that "not only one person makes a robot", so it would be possible to put in the total knowledge of mankind, and then the robot **could** know everything Then a different idea is put forward - that robots do know "what is put into them for them to know", but they are different because they remember everything. (Human's forget) At the end Scott disagrees and says that robots can't know everything (in spite of having the total of human knowledge out into them) because there are some unknowable things, like the last number. Scott is arguing that the limits to what it is possible to know are metaphysical, rather than epistemological.

People can't know the last number not because of limits of ignorance but because there is no last number. The dialogue ends with a fascinating philosophical question having been raised (by Scott) and still to be discussed - in what sense can one have knowledge of what does not exist?

The children also demonstrate some sophisticated argumentation for example:

EXAMPLE 1

Owen's hypothetical reasoning test

If A "if (it [the needle] doesn't go through) N

Then B then (it) A would be (a robot!) " X

Assumed Premise

(things which are impervious to needles being thrown) N

are (Robots) X

Assumed Premise **N is X**

Premise **A is N**

Conclusion **A is X**

It is a robot

Example 2 Matthew's Moral Argument

"if (you threw a needle at it) T

and if (it was a real person) P

then ({wherever you threw it,}

it would start bleeding) B

and if (it was a rusty needle) R

then (it could hurt them) H

LOGICAL STRUCTURE

Assumed Premise 1

(To hurt) **H** and (a real person) **P** is (a wrong thing) **W**

Assumed premise 2

(A wrong thing) **W** is (a thing you shouldn't do) **S**

Assumed premise 1 **(H & P) is W**

Premise (B & R) is (H&P)

Conclusion (B & R) is W

& Premise

Premise if T is (B & R)

Conclusion T is W

& Premise

Assumed premise 2 W is S

Conclusion T is S

Throwing a needle at it is a thing you should not do

McC What was puzzling or interesting in that part?

Jaqueline If, if she wasn't a real person she wouldn't - be - if she wasn't a real person how can she think or talk?

McC If she wasn't a real person how could she think or talk? [writing] Okay, Let's put E. for Elfie, "wasn't a real person how could she think or talk?

Jordan How could she have dreams and - How could she have dreams and think at the same time?

McC [Writing] How could she have dreams and think at the same time? ...

Kristin Why did he say to himself "Dummy if you can wonder you must be thinking"?

McC [Writes] Why did she say to herself "Dummy if you can wonder you must be thinking"? ...

Ami ... why did she say that she- some people- maybe some people can go to sleep with their eyes open.

Robbie Yeah, oh man! [clutches his head in his hand] ...

McC Let's look at Jaclyn's question, number one, "If Elfie wasn't a real person how could she think or talk?" What do you think about that?

Ami Well, I have a question to ask Jaclyn.

Jaclyn?

Jaqueline What?

Ami Well, like why, I mean like how- when did - how did you- I mean how did you think of that question?

Jaqueline Well that's a toughie, because um, it says in the story she maybe not be alive if she didn't talk. [Sarah hands Jaclyn a book to help her find what it said]. Or she couldn't like think or something....

Jordan If, if she- if Elfie wasn't real then, then she wouldn't be able to - she'd be able to talk because then she might be what we were discussing yesterday. But if she wasn't real then she wouldn't be able , she wouldn't be able to think! And she wouldn't , she wouldn't even be able to move every part of her body and stuff like that...[Softly]

Alex I agree with Jordan because if you weren't real you, you couldn't , you wouldn't - you'd be like- you's just be a model and you wouldn't be able to hear and everything like that.

McC Alex, what did you say? What would you just be if you weren't real?

Alex Well if you weren't real you'd just be a model and you wouldn't be able to hear and everything. You'd just be a model?

McC And you wouldn't be able to hear.

Owen Well I disagree with Jordan because of - well he wouldn't - What do you mean he wouldn't like not be able to move any part of his body? Mayb- What if like it was a robot?

McC Well that's an interesting question

Owen A robot can move every part of his body and a robot isn't real!

McC Now, is a robot a person?

(chorus, No! No!)

Laura I agree with Jordan because if you weren't real then you couldn't talk. You would just be still, and you wouldn't' be able to hear and talk and move at all.

Matthew Well if, if - I agree with [looks at Laura]

McC Laura

Matthew Laura. Because if, if you weren't real you wouldn't be able to, to like move around. And you would be, you would - You wouldn't be able to think, you wouldn't be able to hear and you wouldn't be able to do anything.

Kristin A ro- a robot isn't a person because it's- it's a robot it's not a person.

McC Well lets think about this for a minute. Supposing something came in through the door right now and it looked just like a person, and it talked and it moved, how would we know whether it was a real person...(chorus ooh! ooh! ooh!) ... or a robot that looked like a person?(chorus oh! oh!) ...

Could you tell whether it was a robot or a person?

Matthew Yeah, you could because if, if you like - maybe like, just- Well no! Because if , if it looks just like a person then you wouldn't be able to. Because you can't, you can't rip off - you can't like do something to it because what if its a real person? You never know which, if its a real person or not, ...

McC Now that's an interesting thing you said Matthew. You could do something to it if it was a robot, but you couldn't do something to it if it was a person.

Matthew Yeah. You can't like rip stuff off of it. Because then, because then, because if it was a real person you'll hurt it. You'll hurt the person then.

Laura I agree with Matthew on his first question at the end. Because they, they have- you can't rip off the skin of a person, but as a robot you can. ...

Alex I agree with Matthew too. Because because if you did make like a human robot and you sent it to school it could , it could learn a lot. And it would be a good thing to have it...

Owen Well I agree with Matthew because , well you could tell a robot from a person because you could - What you could do to the robot was like you could like , you could- Well you could throw a needle at it. And? And , and if it, and if it, and if it - and if it like - and if the needle, and if it doesn't go through then it would be a robot!

McC So that would be a test so you could tell the difference between a robot and a person? ...

McC Why, why couldn't you throw a needle at it?

Marsha Because , because if it s- if it sticks you really deep then you would bleed. And to a robot it would- wouldn't bleed.

Matthew I agree with Marsha. Because if you, if you, if you throw a ro- if a robot - if somebody walked in the door right , and someone- and we thought it was a robot, we wouldn't, we wouldn't be able to know. And if you threw, if you threw- and if you threw a needle at it, the pers- and if it was a real person, wherever you threw it it would start bleeding. And, and if it was a rusty needle- if it was a rusty needle it could, it could, it could hurt them 'cause it would have rust on it and everything.

Kristin Well I, I think that that's not really a good idea to find out how it works because if it was a real person it would hurt very badly and the person could get hurt. I think that you could, that it's pretty good, but you shouldn't do it. You should pick a different way to disc - to, to find out.

McC Can you think of any way , any test that you could give it to find out whether it was a robot or a real person?

Jordan I know, I know. Well, mm, well a way that you could do it is if you sended it to a doctor. If you put a nee- and if he put a needle in it, it'll - it would have, it would have- Well blood would have to come out.

Sarah ...have something metal and put it on there and see if it sticks because metal against a magnet does stick.

McC Okay, Lets think about this for a minute, Laura, supposing a person had a metal leg, are they still a person?

Laura Well, um, they are and the aren't. Because they are for the rest of their body, but they're kind of not for that part of their body, because it's not the same as the other parts of their body, its not as soft

as the other parts of their body and it wouldn't be - And you could feel it would be harder because of their bones.

McC So do you think they wouldn't be a person?

Laura Well I think they would be a person but that leg would be a kind of a person, not really like us.

Jordan Well I agree with Laura and I disagree with her because if something happened to the leg like if it got flattened and the doctor had to replace it then they would still be a human. But if it was like how Matthew said if it was a robot with fake skin there, then it wouldn't be a human....

McC Let me ask you this, supposing a person had two metal legs, would they be a person then?

No!

Kristin They would be real because just because they have the metal - metal legs doesn't mean that they're not real, because they are still a person....

Laura ...I agree with Kristen Rago because if you have two metal legs it doesn't mean that you're a fake person, it means that you're a real person. If you have had legs replaced you would still be a person.

Jordan I agree with Kristen because as I said maybe something happened to it like if it got flattened or something like that. Or if it got chopped off by an axe or something. [chuckles] Maybe they would need to replace it with false legs, but it would still be a human, the person would still be a human.

(oh, oh, oh,)

McC So they would have false legs, but Heather said it wouldn't be a fake person.

Oh, Oh, I want to say...

(child) Yes it would still be a person.

Matthew I disagree with Jordan on part of that he said. And I agree with Kristen because even if you had two metal legs, you'd still be a person because you'd still think like a person, you'd still have a human brain. And I disagree with Jordan because if someone chopped both of your legs off with an axe, you'd be dead.

(child) I disagree with Matthew because you wouldn't be dead because, see - if thy saved other kinds of legs they could sew it back on. Like if you get stitches if you have a crack in the head, they sew it back together. Well you could like sew the other leg back on.

Um, well,

McC What do you think? If you had two metal legs would you still be a person?

Laura I, um, disagree with Matthew 'cause Matthew said- I mean I agree with Matthew 'cause Matthew said if you had two legs chopped off then you would be dead.

McC Um hm, well what about the other part of what Matthew said - that if you had a human brain you would be a person? Even though you had metal legs, - D'you agree with that?

Laura Yeah. I agree with Matthew if you did have like- if you did chop off you legs you would be automatically dead, And if you had a real brain you would be a person.

McC Supposing that you had a human brain but the rest of you was all metal, your eyes and your mouth and your nose and everything would you be a person then?

(child) I agree with Jordan because if your legs were chopped off you could replace them with false legs because your heart wouldn't be damaged or anything.

Oh, I know , I know!

McC Okay, Matthew then Laura.

Matthew Well about the one that you just asked us to think about. That one. If you still had your human brain you would be- you wouldn't be a person because - you said the rest of your body was metal? Um, hm, Your heart would be chopped off so you wouldn't be alive! You wouldn't have any blood flowing through your body!

Sarah Wait! I don't understand that.

Matthew Oh, I'll clarify it. Well see you know your heart it flows blood through your body? Well if all your body was metal and your head was only left, it would be cut right here, [demonstrates], and your heart wouldn't be there to flow blood through your brain. So you wouldn't be a real person, you wouldn't even be alive!

Sarah I don't agree with that.

McC So Matthew, are you saying that you have to be alive to be a real person?

Matthew Well no. But, well kind of. I don't know, but you can't live without a heart because it has to flow blood to your brain.

I disagree with Matthew because if your heart was metal the rest of you body would be metal except your brain. Your brain doesn't need blood....

McC Alright, we're going to look at the next question now, which is Jordan's question. [reads] "How could she have dreams and think at the some time?" And there was Jordan and Heather and Alex were all interested in that...

Oh, Oh, Oh, Oh!

McC... Okay. Now Jordan you asked the question, so could you explain what was puzzling about that. "How could she have dreams and think ...

Jordan Well what I think was interesting about it is, um, even though it didn't say that , oh she um Elfie thought and dreamed at the same time - it's just that she said "I don't have fancy dreams", but she never said that she didn't have dreams. But she also said that she thought. So that's why I said that.

Heather ... Sometimes you can think and dream, sometimes, but mostly you can't. ... [experimenting with closing her eyes]

Jaqueline Well I agree with Heather because, um, you can't dream at the same time and think. Because , um, see 'cause sometimes if you're dreaming - You can't dream without thinking. You can't dream without thinking?

(child) You have to think what you're going to dream! ...

Laura I agree with Heather and Jaclyn because like sometimes you can think and dream, and sometimes you can't. Because like when you're dreaming - like you can if you're dreaming and then you're thinking in your dream. Sometimes it's hard to think and dream at the same time, especially if you're thinking about something else and you're dreaming about something else. Because then you might get mixed up....

Matthew Well, um, I agree with Heather because, um, you can think and dream sometimes. Because when you're not thinking and you're dreaming, your imagination is thinking. So your imagination is thinking sometimes but your brain is thinking with it. So I agree with Heather.

Jordan I agree with Matthew and I disagree with Matthew. Because you control your imagination. So if you were dreaming - Some people say that your dreams are in your imagination, and some people say you don't. But if your dreams are in your imagination, then how could you think in your imagination while you're dreaming in your imagination? But you could think in your dream while you're in your imagination! ...

McC Alright what's the difference between thinking and dreaming? How would you know if you were thinking or you were dreaming?

(child) Could you clarify that?

McC Okay, yes I asked two questions. First what's the difference between thinking and dreaming? And secondly, which is a different question, how would you know whether you were thinking or dreaming?

(child) That's hard!...

Kristin I think that thinking and dreaming - um, dreaming is when you're asleep or, yeah, when you're asleep and um, then your imagination it starts. I think a dream is imagination and thinking is, um, I think thinking is, eh, - I can't, I can't say what thinking is!

McC But you think dreaming is imagination? ...

Jordan I disagree with my question, its because some - I do this a lot too - If I pinch myself when I'm, when I'm, I'm still dreaming and I don't pinch myself in the - in my dream sometimes, I wake up and I fall off my bed. But , and, and then, and then I try, and then I go back to bed. But then I keep on pinching myself in my dream. Then I pinch myself when I'm, when I'm still dreaming.

McC So can you tell you're dreaming? Is that how you know you're dreaming, Jordan?

Jordan Yeah. When I, when I pinch mysel- when I pinch myself and when I don't wake up when I pinch myself in my dream. And then when I, when I pinch myself and I, and I'm waking - and I woke up when I pinched myself, that's how I know if I was pinching in my dreams or if I wasn't pinching in my dreams.

McC Right.

Sarah I have a question for you, Jordan. How can you do that? How can you like, if you're on the middle of the bed, how can you just fall off and - pinch yourself in your dreams?

Jordan What I do, what I do to do that is: when I pinch myself I - Sometimes my sis- my sister pinches me or something and that's what, and that's what I do to - And that's what it feels like. So, and then what I do to - to not - for her to not pinch me , is I roll, is I roll, is I roll to my Mom and Dad sometimes. It happened to me. I thought I was downstairs in my den and, and then when I pinched myself, I fell- I rolled and I fell off the bed. ...

McC Okay, Let's look at the next question here [indicates], Kristen "Why did she say to herself "Dummy, if you can wonder, you must be thinking"?" Let's go back a bit. What was it she was wondering about? Does anyone remember what she was wondering about? You can look at it if you don't remember. [Children look] What was it she was wondering about?

(child) She knew she was in doubt of if you can - if she can sleep and think.

McC At the same time?

Sarah I know, I know!

McC Tell the whole class, Sarah.

Sarah It says in the book that if you can't dream - if I can dream I must be thinking. So she's re- really talking about dreaming and thinking.

McC She's really talking about dreaming and thinking?

Sarah She was thinking about if she was real or not.

McC And so why did she say if you can wonder you must be thinking?

Jordan I don't know why she said that. I don't know why she said that. But, maybe she- maybe she said that because even though dreaming and thinking are not the same thing - But it could and it couldn't. Like if you're wondering, like what's in that- what's over that fence, and you're thinking, and then you could think "What's over that fence." ...

Sarah When I'm thinking I'm for real. But you might have brain surgery and you're still for real but if you're thinking you must be for real.

Oh, Oh, Oh!

McC [to Matthew] Wait.

Sarah And robots can think and so - and robots can think and they're for real. So I kind of disagree with that.

McC You kind of disagree?

Matthew I, I agree with Sarah because I'm thinking what to say and I'm for real right now! And I disagree with Sarah is- Well I agree with Sarah on two things. Because if I'm , I'm thinking right now what to say - And the second thing she said, because robots, robots they're for real. Because they are real. But, but they don't - but they don't think how we do.

McC They don't think how we do?

Matthew Because - They don't think how we do because, because they, they like have brains and they're made out of - Well we have brains but they they think a little bit different. But they think, they think somehow alike to us. ...

Alex I agree with Matthew because if- 'cause robots do think a little different than humans and I - Matthew, I forget what you said. Can you say it again?

Matthew Well they think a little different from us because they can, they can, they can like - they know a little more than us because they- they're - People make them and whatever people put, whatever people put in their brains for them to know, they know....

Owen I disagree with Jordan because a robot does know everything because you can know every single thing for math if you can, if you can put a calculator in it.

Matthew Yeah, That's what I said. To put a ///

Kristin Well what- I don't really get that, Owen.

Owen Well I- ... can put the alphabet in it and it , and it could read all the words!

Matthew Well then I agree with Owen because, and this is what I said before, whatever- if you put a computer in the robot, whatever you program it to do it will do. Like , like probably you don't know something. And you program it into the robot. The robot will do it. and the robot will do anything.

McC The robot would do anything?

Matthew Well except- Well yeah because the person that made it had it in his com- command. ...

McC Would a person just do anything?

Matthew No, because a person, a person when... [sound of school intercom.] ...like [sound of school intercom] ... one hundred...

McC Okay [gestures to Matthew to ignore the intercom.]

Matthew ... put a hundred- a person wouldn't jump off a hundred foot cliff with a ladder...

Scott Well see I disagree with Mat, robots couldn't know everything. the person who puts the robot- who made the robot couldn't know everything to put into the robot to make it know everything. ...

McC Scott, I'm not sure if I quite heard you. Did you say that the person who made the robot knows?

Scott No, he doesn't know everything, so he couldn't tell the robot everything. ...

McC Let me see if I understand what Scott's saying. You couldn't have a robot that knew everything because the person who made the robot couldn't know everything?

Scott Yeah!

McC So a robot only knows what the person who made it knows?

Scott Um! Oh!

McC Is that right Scott?

Scott Yeah

Matthew I could know more than that robot knows! Well because I, I...

McC Well now Matthew, you talked already so lets give Owen a chance here.

Owen I, oh was Scott the one who was speaking?

McC Mmm hmm

Owen Well I disagree with Scott because, because not only one person makes a robot. A lot of people make a robot. A lot of people do different jobs to make the robot. So if they all work together, they could know everything.[Scott shakes his head]

McC You still think it's not possible to know everything, Scott?

McC Why, Scott?

Scott Well because only - no-one knows everything 'cause there is no last number.

McC There's no last number?

Scott there's no last number so people - and I don't- most people don't know like names for other numbers after you get outside a thousand billion.... No one knows what comes after infinity. So people can't know everything. I mean people, people don't know where the end of the universe is. And people don't know lots of things. And you just can't learn everything in school!

In this dialogue, the children begin their **philosophical**reasoning by establishing that existence is a necessary condition of anything, including thinking and talking. This topic is developed by considering that while existence is a necessary condition of being a person, there are also sufficient conditions to be satisfied: to be a person one must also be able to hear, etc.

Then a challenge is made about the conditions of personhood thus far raised - in the form of a counter example from Owen who says that a robot could fulfill those conditions of thinking and moving etc., but a robot is not a person. Kristin reiterates that robots are not people. At this point, I ask how could we know the difference. In his consideration of this question Matthew then raises a new criteria of personhood - that persons are owed moral consideration - you cannot hurt a person.

According to the arguments put forward by the children in this dialogue a robot, although similar to a person in many respects, would be denied the status of personhood on three counts:

• As artifacts they are not subject to moral consideration;
• They do not have the right biological origin;

• They do not possess free will.

A fourth feature of personhood that they consider in depth concerns the kind of thinking which people do. It is suggested that although robots think they do not think in the same way as people. The children give several accounts of how the robot's thinking differs from human thinking. Firstly they explain, "a robot does not know anything it is the person who made the robot that knows". Owen then disagrees saying that "not only one person makes a robot", so it would be possible to put in the total knowledge of mankind, and then the robot **could** know everything Then a different idea is put forward - that robots do know "what is put into them for them to know", but they are different because they remember everything. (Human's forget.) At the end Scott disagrees and says that robots can't know everything (in spite of having the total of human knowledge out into them) because there are some unknowable things, like the last number. Scott is arguing thatthe limits to what it is possible to know are metaphysical, rather than epistemological.

People can't know the last number not because of limits of ignorance but because there is no last number. The dialogue ends with a fascinating philosophical question having been raised (by Scott) and still to be discussed - in what sense can one have knowledge of what does not exist?

Example 1

Owen's hypothetical reasoning test

If A "if (it [the needle] doesn't go through) N

Then B then (it) A would be (a robot!) " X

Assumed Premise

(things which are impervious to needles being thrown) N

are (Robots) X

Assumed Premise **N is X**

Premise **A is N**

Conclusion **A is X**

It is a robot

Example 2 Matthew's Moral Argument

"if (you threw a needle at it) T

and if (it was a real person) P

then ({wherever you threw it,}

it would start bleeding) B

and if (it was a rusty needle) R

then (it could hurt them) H

LOGICAL STRUCTURE

Assumed Premise 1

(To hurt **)** **H** and (a real person **)** P is (a wrong thing) W

Assumed premise 2

(A wrong thing) W is (a thing you shouldn't do**)** S

Assumed premise 1 **(H & P) is W**

Premise **(B & R) is (H&P)**

Conclusion **(B & R) is W**

& Premise

Premise **if T is (B & R)**

Conclusion **T is W**

& Premise

Assumed premise 2 **W is S**

Conclusion **T is S**

Throwing a needle at it is a thing you should not do

Example 3 Jordan's use of Set Relations

Could you think and dream at the same time?

she said "I don't have fancy dreams", but she never said that she didn't have dreams. But she also said that she thought.'

'Fancy dreams' are a subset of 'dreams'

Saying you don't have fancy dreams does not preclude having other kinds of dreams.

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Example 4 Laura's use of Set Relations

'..like you can if you're dreaming and then you're thinking in your dream...'

IF thinking is a subset of dreaming THEN you can think and dream at the same time.

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Example 5 Matthew's use of Set Relations

'... Because when you're not thinking and you're dreaming, your imagination is thinking. So your imagination is thinking sometimes but your brain is thinking with it.

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(not possible)

Example 6 Jordan's synthesis of Set Relations

'I agree with Matthew and I disagree with Matthew.

But you could think in your dream while you're in your imagination!'

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Example 7

Sarah's Hypothetical syllogism

If T (you're thinking)

Then P (you must be for real)

Has a valid logical structure

Hidden premise

All T's [thinkers] are P's[real persons]

premise

Y [You] are a T [thinkers]

Conclusion

Therefore Y [You] are a P [real person]

But then

Example 8

Sarah's Hypothetical syllogism

Sarah's Hypothetical syllogism with her demonstration of the invalidity of the denial of the antecedent leading to the denial of the consequent

" ...But you might have brain surgery and you're still for real ... "

All T's [thinkers] are P's[real people]

Y [you] is not T [not a thinker -(because of brain surgery)]

Does not lead to

Y [you] is not P [real person]

Example 9

Sarah's Hypothetical syllogism with her stress on the confirmation of the antecedent implying the confirmation of the consequent

"but if you're thinking you must be for real."

All Ts [thinkers] are P's[real persons]

Y [you] are T [thinkers]

Must lead to

Therefore Y [you] are P [real person]

But

Example 10

Sarah's Hypothetical syllogism with her demonstration of the unsound argument because the conclusion is false

"...and robots can think and they're for real. So I kind of disagree with that."

All T's [thinkers] are P's[real persons]

X [robot] is an T [thinkers]

Therefore X [robot] is a P [real person]

But X [robot] is not P [real person]

Therefore not All T's[thinkers] are P's [real person]

To achieve these results I worked with the children for an hour a day over 8 weeks - over 40 hours of PI.

The PI reasoning structure is a simplified version of the dialogue structure which I developed for use with university students in Dublin in the 1970's.

When I was a student in the 1970's we had to learn the canon of the 'great philosophers, and learn how to criticize and assess philosophy. Some of us were disappointed that as students we never got a chance to philosophise ourselves in class. However there was a student Society called the Metaphysical Society, which had funds. So when by chance I became Auditor of the Met Soc, I decided that this could be a place where everyone could philosophise. So I used our field trip budget to send two of us to the Northern Conference in England, so that I could observe philosophers in their natural habitat in order to find out how philosophers themselves actually philosophized. There I observed that Philosopher A would give his paper outlining his new theories. Philosopher B raised counter-arguments; Philosopher C agreed with A's premises but said that they led to a different conclusion. Then Philosopher D offered an example which would support A's theories but was also consistent with B's counter-arguments. Philosopher A would thank Philosopher D and re-work his arguments to transcend the initial theory etc. When, some time later, Philosopher A published his paper it included the ideas which had been developed with his colleagues from the conference.

Unlike the image of Rodin's thinker, Philosophy was not an isolated activity! (And moreover these Philosophers did not regard themselves as 'cheating' when they collaborated together). Unlike in our philosophy courses we had charge of what we did in the metaphysical Society, so progressing this idea of collaborative philosophical work, I invited philosophers to give short papers, which were then to be followed by group philosophical dialogue.

We attempted to follow a structure of thesis, antithesis and synthesis. And the method seemed to work very well. Certainly the visiting philosophers enjoyed it, (though the entertainment budget probably helped) and we felt we were really thinking for ourselves.

Ten years later I arrived at the IAPC. And by mistake I registered some teachers in a graduate class - who should not have been there. They were 1st and 2nd grade teachers, and at that time the IAPC programmes began in 3rd or 4th grade. But they were very keen, and one 1st grade teacher in particular had been wanting to do Phil with her class for years, and pleaded that we try it. (Even though, unlike her colleagues teaching older grades, she got no credits for implementation) Because there were no manuals for the young children I had to improvise, and decided to try the structure I had used in Dublin (and later in Manchester). Obviously the structure needed to be simplified so that

the children could use it - and so the basic reasoning structure of thesis antithesis and synthesis which in turn becomes the new thesis, became

I agree with (name) _____ because _ (reason)

And/or

I disagree with (name) _____ because__(reason

This PI structure requires participants to be clear about how their point is related to points put forward by others, so that the structure of the dialogue itself is made visible. Moreover the structure also requires children to give reasons for the idea of theory they are putting forward. This in turn allows other children to disagree about the relationship between the idea and its supporting argument. They may agree with the idea but disagree that the arguments support the idea. Or agree with the arguments but draw a different conclusion from them.

The Conductor of a PI session can use the generative possibilities of the structure to 'tease out' the underlying philosophical assumptions in what is being said either by adults or by children.**13**

Given one idea and one reason to support the idea, the PI structure allows 4 immediate possibilities:

Idea I because of argument A

1 Agree with A & agree with I

2 Agree with A & disagree with I

3 Disagree with A & agree with I

4 Disagree with A & disagree with I

Given one idea and two reasons to support the idea, the PI structure allows 8 immediate possibilities:

I because of A and B

5 Agree with A & agree with B & agree with I

6 Agree with A & agree with B & disagree with I

7 Agree with A & disagree with B & agree with I

8 Agree with A & disagree with B & disagree with I

9 disagree with A & agree with B & agree with I

10 disagree with A & agree with B & disagree with I

11 disagree with A & disagree with B & agree with I

12 disagree with A & disagree with B & disagree with I

So for example when Sarah said " I agree with Matthew on his first part and at the end but I disagree with the bit where he said that …. she is probably using number 7

Most children 's contributions are in forms 1-4, but some are more complex 5-12.

And they can get even more sophisticated because the children will often connect something which has been said earlier and bring it into their argument as well.

Now there are many different methods of generating dialogue - perhaps as many as there are philosophy cafes in France, but there are 2 methods widely used in Europe Nelson's Socratic method and Lipman/Sharp P4C method. PI is similar to both of these methods in several respects:

- They all involved groups of people
- They all stimulate dialogue from a question in some way
- They all involve a form of philosophical discussion or investigation

All though all three methods involve groups of people .The constitution of the groups, which work with different methodologies, are slightly different. In P4C the groups are composed of children or teenagers, usually at school. In Nelson's Socratic Method the groups of people have traditionally been adult. Although in England there has been some use all Socratic Method or if teenagers. In PI the groups of people may be of any age. Philosophical Inquiry can be and it is undertaken with young children, teenagers are, University students, adults and seniors.

Similarly while all three methods begin with a question, the way the question is arrived at is different: In P4C the children ask questions following reading part of an IAPC novel. There will be as many questions as the children wish to ask. Then

"The group should vote for the question they would like to go forward to the discussion. The helps to give the 'community' a sense of democracy as well as allowing all contribution to considered in a fair way"[14] The Facilitator will usually begin with the first question. In Nelson's Socratic Method a long time is spent with the group under the Directors guidance selecting one question. Then one of the groups is asked to volunteer to be a 'witness' who will provide a real example of the question topic from their own experience. In PI an arbitrary number of questions are asked by the participants after looking at an image, watching a video or reading a text - sometimes a Phil. novel, sometimes a philosophy text or a newspaper article. One of these questions is chosen by the Conductor[15], who uses a number of criteria in making the choice. Conductors have to learn the criteria and how to make the judgement as to which criterion is most paramount in each live situation[16]

While all three methods encourage dialogue or discussion, the kind of discussion and dialogue which the three different methods generate is different. In P4C the discussion does not follow a pre-set structure, but the discussion is shaped by pre-set exercises, which play a role in determining the both topic under discussion, and the direction of the discussion. In Nelson's Socratic Method the discussion is guided by a Director whose job it is to guide the discussion in a philosophical direction using the regressive method. Moreover SM follows a rule that only actual experience can be used in the discussion - no abstract generalities are allowed. In PI the dialogue follows a reasoning structure which is used by the Conductor to stimulate a dialectical movement. But the content, while stimulated by a text, is then determined by the participants thinking, and the philosophical assumptions which underlie the participants thinking.**17**

While all 3 methods have a similar strategic aim of having the participants think for themselves about Phil. Topics, the tactical aims are different. In P4C the aim is that all the children can express their thoughts and listen to the thoughts of others. By facilitating the open expression of thinking the Facilitator aims to create an environment (a coi) where children feel secure, and in which every one is listened to and respected. In SM the aim is to come to consensus. The Director aims to focus the discussion ' in' and 'down'. The group will question the 'witness' and spend at least 20 hours under the guidance of the Director discussing the example in order to answer the over-arching question. They don't always answer the question, but the discipline of focusing on that end drives the discussion deeper. In PI the aim is to illuminate the topics under discussion. There is no drive to any conclusion or closure. The Conductor aims to create a dialogue which widens and opens up the topics, and in which there is disagreement and difference. If participants leave feeling more confused about a topic than they arrived - this is success. The dialogue has opened up the complexity of the topic. The dialogue stops at an arbitrary time and place.

Because the three methods are different, different skills are needed by the P4C Facilitator, the Socratic Method Director and the PI Conductor. In P4C

"A prime step in this is to cultivate the social and emotional security that will enable members of the group to contribute their best to the enquiry. This almost always involves giving primacy to others, their ideas and their **feelings**. In that sense, the role is similar to that of a chair or referee who is charged with seeing 'fair play'.

There is also the responsibility though, especially with children, to guide the group towards better ways of thinking together. …. It may also, occasionally involve putting a question to the group that is designed to deepen or widen their thinking. It does not, however, give a Facilitator license to push the enquiry into a particular direction just because it suits their own particular interest. It is the interests of the community that counts, though there is often a difficult balance to be achieved here in managing that with the needs of the particular group with those of the context and the curriculum."**18**

A P4C Facilitator needs to be able to introduce exercises from the teachers manuals in order to deepen the children's thinking. These exercises are written to develop the children's thinking about the key ideas in the Lipman novel. The key ideas are philosophical, psychological and social. In Nelson's Socratic Method the Director needs a deep knowledge of philosophy. It is his or her job to mould discussion towards a philosophical investigation. And not just any investigation, but one using Nelson's regressive method. In PI the Conductor needs knowledge of philosophy and logic. The Conductor structures the dialogue out of the thinking of the participants by deliberately juxtaposing potentially different underlying philosophies in such a way that their contradictions generate philosophical tension. To do this the Conductor must be able to do instant philosophical analysis of the metaphysical, ethical, ontological and epistemological assumptions that underlie what the participants are saying. The Conductor must also remember which participant contributes which kind of underlying Phil assumptions so that she can call in contributions, which will be in Phil. conflict and tension. She must be able to do instant logical analysis of the structure of the ensuing dialogue and use the logic to bring out contradictions, which then push the dialogue further. In PI the Conductor's responsibility is to the dialogue first and the people second.

However as with an orchestral Conductor the PI Conductor's attention to the dialogue does not preclude attention to the players/speakers. The PI Conductor helps participants to re-construct their own thinking into argument forms. Using the PI structure to make the logical patterns visible, the Conductor can juxtapose arguments in order to suggest the logical possibilities. Then the group is able to examine those possibilities with examples (as Plato often does in his earlier dialogues). The participants 'test' their ideas against 'reality'. In this way the method of PI is similar to scientific method. The logical forms made visible by the Conductor generate logical possibilities in the minds of the participants, the group are then often asked to test these possibilities against examples. So for example if the group find a real life counter example, it acts as a falsification of the hypothesis, and a new hypothesis emerges which will encompass the counter example.

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(1) When I gave the paper to the SOPHIA conference in Graz 2004, the practise was illustrated by two short videos: footage from the BBC documentary "Socrates for Six year olds" (1990) and from the American PBS programme "The Eleventh Hour" (1988). I am here substituting excerpts from the transcript of the 1988 session with five year olds.

(2) Some readers may have seen the TV documentary Socrates for six year olds. It was shown in many countries in the early 1990s and is still widely used by colleges of education and other organisations.

(3) One of the characteristics apparent in the video and not in a transcript is the joy, which can be seen on the faces of the children and the animation in their eyes. That joy and animation reflects the intrinsic delight, which the children experienced in philosophical inquiry.

(4) See Gareth Matthews for a detailed account of this (mistaken) philosophical assumption.

(**5**) Plato Apology

(**6**) In most Western societies there are resources such as libraries available to everyone, and yet children and adults do not use them.

(**7**) For a full exposition of how reasoning is a moral activity and not just the application of thinking skills see The 1991 Stevenson Lectures, published by Glasgow University Press 1991.

(**8**) As parents will attest - the rhetoric of 'the right trainers' costs a fortune

(**9**) See The 1991 Stevenson Lectures (op cit) for examples of skill in analytic thinking which led to atrocities rather than good citizenship

(**10**) As shown in the 1990 BBC Socrates for six year olds documentary

(**11**) See Margaret Donaldson's Children's Mind's for a detailed explanation as to why children fail in such tests.

(**12**) The transcript is 'edited highlights' from a PI session that actually lasted over an hour. The full transcript of this session is published in Thinking.

(**13**) Note the structure does not do this by itself - The PI Conductor needs a knowledge of logic and philosophy in order to use the structure to do this.

(**14**) Sapere handbook.

(**15**) I have distinguished the persons who are ' in charge' of the 3 different practises by naming them Facilitator for P4C, Director for SM and Conductor for PI. This is for purposes of clarity and is not to be taken as the 'official' titles of such persons.

(**16**) This training is done as part of the M. Phil. Degree in Philosophical Inquiry.

(**17**) The PI Conductor has to be able to do 'live' instant philosophical analysis to determine the possible philosophical assumptions which underlie what is being said by participants.

(**18**) Sapere handbook.