

Approaches to Successful Learning: The Perry Scheme of Intellectual Development

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My Credentials

- Bachelor's in math
- Masters' in philosophy & in computer science
- Ph.D. in philosophy
- Taught 7th grade → Ph.D. students & faculty
- Taught math, philosophy, computer science, cognitive science, even English composition!

Survey

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 - If not at a university, then at a “real-world” job:
 - Talking to your boss about your work
 - Making oral presentations to colleagues

4 Approaches to Successful Learning

- All 4 used by everyone
 - At different times in life
 - In different areas of life
 - Sometimes simultaneously
- Some are more appropriate for some people in some circumstances
- Identifying a student's approach can help **you** to help the student

- Remember...
 - what it was like for **you** to be a student
 - which teachers you had who were:
 - good **(do what they did)**
 - bad **(don't do what they did)***

*Cf. Ben-Al, Sarah (2004), “Don’t Be That Guy”, *Chronicle of Higher Education* (Aug. 13): C3

FAMILY CIRCUS



"I can't wait till I'm in the
eighth grade and know all
there is to know."

The Perry Scheme

- William Perry:
 - head of counseling, Harvard, 1950s
- “What stands out for you over the last year?”
- Discovered 9 “positions” from which students viewed knowledge & learning
- Has been replicated & adjusted
 - Cf. Belenky et al. (1986), *Women’s Ways of Knowing*

A. Dualism / Received Knowledge:

There are right/wrong answers to all questions, known to Authorities

A. Dualism / Received Knowledge: There are right/wrong answers to all questions, known to Authorities

1. Basic Dualism:

- All problems are solvable
 - Solutions on Golden Tablets in sky
 - Only Authorities (= teachers) have access
- Student's task = to learn right solutions

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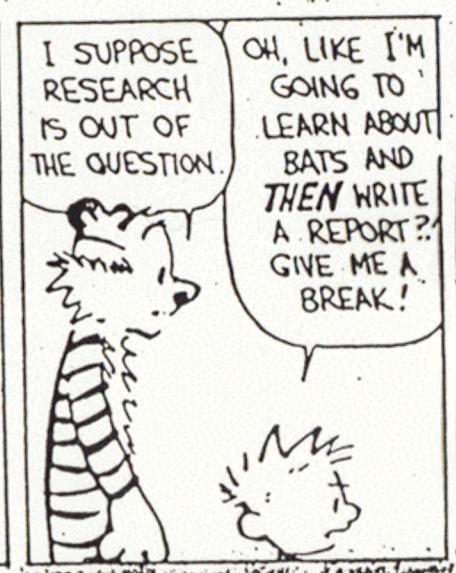
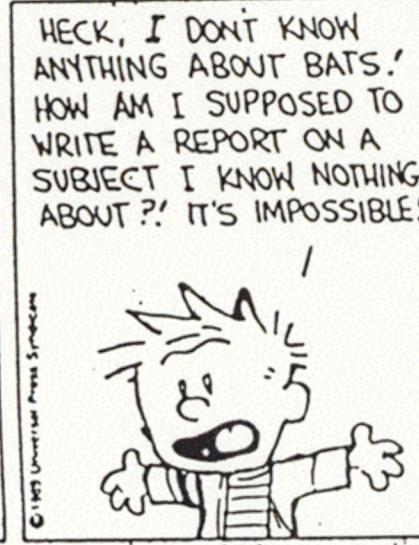
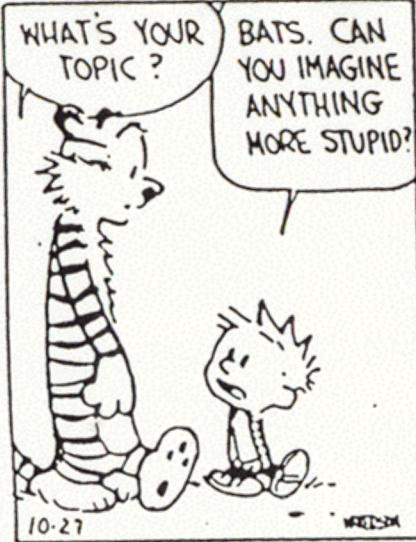
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2. Full Dualism:

- Some authorities (literature, philosophy) disagree
- Others (science, math) agree
- ∴ There are correct solutions
 - but some teachers' views are obscured
- Student's task = to learn right solutions
 - And ignore others?

CALVIN & HOBBES



DOONESBURY

..AND IN MY VIEW, JEFFERSON'S DEFENSE OF THESE BASIC RIGHTS LACKED CONVICTION. OKAY, ANY DISCUSSION OF WHAT I'VE COVERED SO FAR?

SCRIBBLE! SCRIBBLE!
SCRIBBLE!
SCRIBBLE!

OF COURSE NOT.
YOU'RE TOO BUSY
GETTING IT
ALL DOWN.

by Garry Trudeau

LET ME JUST ADD THAT PERSONALLY I BELIEVE THE BILL OF RIGHTS TO BE A SILLY, INCONSEQUENTIAL RECAPITULATION OF TRUTHS ALREADY FOUND IN THE CONSTITUTION. ANY COMMENT?

SCRIBBLE!
SCRIBBLE!
SCRIBBLE!

NO, SCRATCH THAT! THE CONSTITUTION ITSELF SHOULD NEVER HAVE BEEN RATIFIED! IT'S A DANGEROUS DOCUMENT! ALL POWER SHOULD REST WITH THE EXECUTIVE! WHAT DO YOU THINK OF THAT?

SCRATCH!
SCRATCH!
SCRATCH!

JEFFERSON WAS THE ANTICHRIST! DEMOCRACY IS FASCISM! BLACK IS WHITE! NIGHT IS DAY!

SCRIBBLE!
SCRIBBLE!
SCRIBBLE!

TEACHING IS DEAD.

BOY, THIS COURSE IS REALLY GETTING INTERESTING.
YOU SAID IT. I DIDN'T KNOW HALF THIS STUFF.

For dualistic students ...

- Instructor:
 - Seen as the only legitimate source of knowledge
- Themselves:
 - Seen as receivers & demonstrators of knowledge
- Other students:
 - Not seen as legitimate sources of knowledge
- On evaluation:
 - Wrong answer = bad person
 - Evaluation should be clear-cut
- Support:
 - Need high degree of structure
 - Dualistic students like lectures, hate seminars

Voices of Dualism

- Cornell undergrad (NY Times):
 - “Every lecture course, no matter how bad, has taught me more than any seminar, no matter how good. In a lecture, you get taught by an expert, which means the information is credible. But in a seminar, most of the information is from other students like yourself, which leads to discussion that is irrelevant & suspect in accuracy. [In seminars,] profs don’t like to tell students directly that they are ‘wrong,’ [or] ‘correct,’ so one can leave a seminar confused & not knowing any more than when one entered.”
- Dualism confronted by Multiplism
- Alienation?

Voices of Dualism (continued)

- “I’m lost in CS 341 [computer architecture];
the professor lacks a clue.”
 - I.e., it’s the prof’s fault; he’s the Authority

Are Science Disciplines* Dualistic?

- Leon Henkin (math, UC/Berkeley): NO!
 - “One of the big misapprehensions about math that we perpetrate in our classrooms is that the teacher always seems to know the answer to any problem that is discussed.
 - “This gives students the idea that there is a book somewhere with all the right answers to all of the interesting questions, & that teachers know those answers, & if one could get hold of the book, one would have everything settled.
 - “That’s so unlike the true nature of math”

* Or science, or engineering, **or health professions!!**

B. Multiplicity/Subjective Knowledge:
There are conflicting answers;
∴ trust “inner voice”, not external Authority

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3. Early Multiplicity

- There are 2 kinds of questions (a kind of dualism):
 - Those with answers that we know now
 - Those with answers that we don't know yet
- Most knowledge is known.
 - There are right/wrong ways to find answers to the other questions (another kind of dualism)
 - Student's task =
to learn right ways to find correct solutions

Sally Forth



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*"I still don't have all the answers, but I'm
beginning to ask the right questions."*

For early multiplists ...

- Instructor:
 - Seen as source of right way to get knowledge
- Themselves:
 - Seen as learning how to learn
 - Seen as working hard
- Other students:
 - Seen as in the same boat /∴OK
- On evaluation:
 - Of central concern
 - Quantity of work counts
 - Fairness is important
- Support:
 - from peers, some structure

Voices of Dualism Confronted with Multiplicity

“I really enjoyed this course. I had lots of trouble till about 2/3 into the course, because I was looking for answers. Once I realized there were no answers & you had to figure things out for yourself, it became easier.”

Voices of Dualism confronted with Multiplism (continued):

“TAs should use the Prof’s method of solving problems rather than using their own, which confuse us more, but if the method is simpler & easier to understand, then it’s OK, I guess, to introduce their own method of solving.”

Voices of Multiplicity

“You know, it seems to me that there are 2 different kinds of things we study—things where there are answers & things where there aren’t any!”

Voices of Multiplism (continued):

“There are many of us students who spend from 3–9 hours working on one lab assignment. When we get our grades back, they don’t meet our satisfaction. I spend a lot of time thinking, & trying out my program. When I get a D, I get upset. Maybe the grade should include more effort than if the program runs properly.”

– quantity is more important than quality

4. Late Multiplicity

a) Less cynical form:

- Most problems have no **known** solution
- ∴ Everyone has a right to their own opinion

b) More cynical form:

- Some problems are **unsolvable**
- ∴ Doesn't matter which (if any) solution you choose
- Student's task = to B.S.
- Most freshmen?

SOMETIMES I LIE AWAKE AT NIGHT, AND I ASK, "IS LIFE A MULTIPLE CHOICE TEST OR IS IT A TRUE OR FALSE TEST?"



THEN A VOICE COMES TO ME OUT OF THE DARK, AND SAYS, "WE HATE TO TELL YOU THIS, BUT LIFE IS A THOUSAND WORD ESSAY"



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SCHULZ



B. Smaller

“Maybe it’s not a wrong answer—maybe it’s just a different answer.”

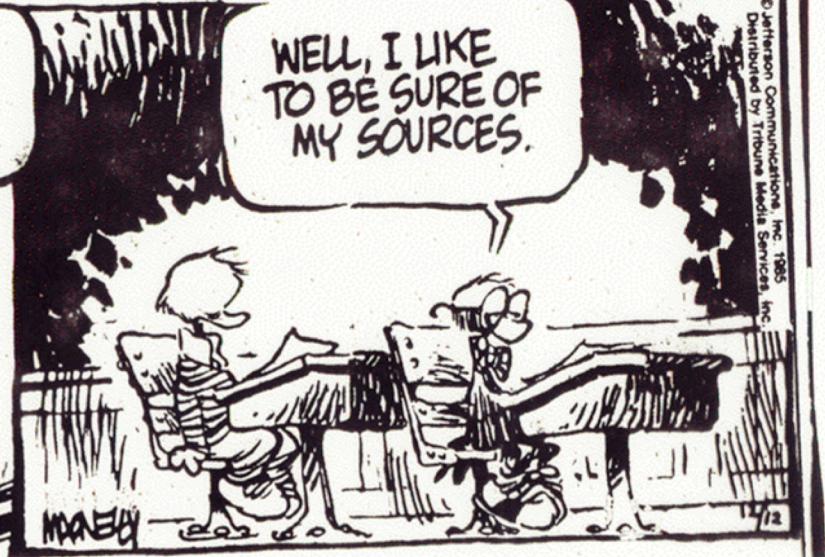
SHOE

HOW DID YOU EVER
ANSWER THAT LAST
QUESTION?...

OH, I JUST
MADE IT UP.

WHY DID YOU
DO THAT?

WELL, I LIKE
TO BE SURE OF
MY SOURCES.



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I MEAN, MOST OF THE EXAMS ARE ESSAYS, RIGHT? IT'S NOT LIKE MATH WHERE THE ANSWER IS EITHER RIGHT OR WRONG! ESSAYS ARE EVALUATED BY PEOPLE WHO EITHER LIKE WHAT YOU WRITE, OR THEY DON'T!

IN THIS CASE, WE ARE AT THE MERCY OF THE EDUCATORS. WE ARE AT THE MERCY OF THEIR EGOS, THEIR PREJUDICES, THEIR NARROW-MINDED ADHERENCE TO THE PAST!!!



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Late Multiplists ...

- Instructor:
 - Seen as source of the thinking process,
 - Or else (cynical form) seen as irrelevant
 - everyone's entitled to own opinion (*)
- Themselves:
 - Seen as learning to think for themselves
 - Seen as expressing opinions
 - whether believed/supported or not
- Other students: Seen as legitimate (but: *)
- On evaluation:
 - Independent thought deserves good grades...
 - Or (cynical form): “I’ll do what they want”
- Get support from: diversity; lack of structure
 - Late multiplists hate lectures, like seminars

Voices of Multiplism (continued)

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- “...I feel like **I’m programmed to program—not learning how & why.**
Why does everyone else get it? I feel stupid.”

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 - Dislike of dualism!
 - Late multiplism → Contextual Relativism?

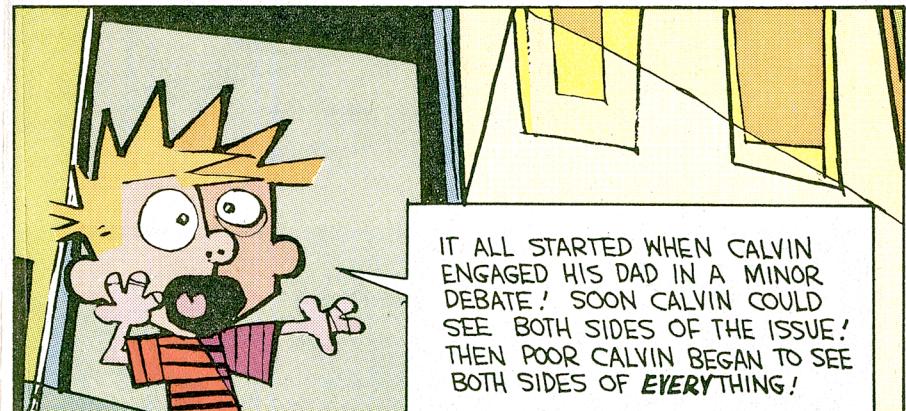
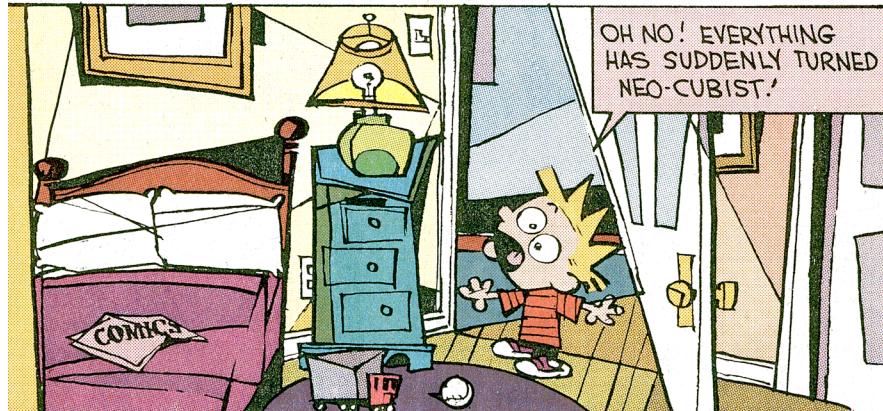
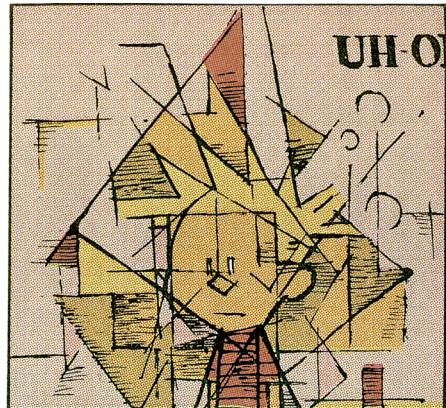
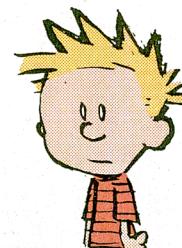
Possible Response to Multiplism:

ALIENATION

- leading to:
 - retreat to earlier, “safer” position:
 - “I’ll study math, not literature, because math has clear answers & not as much uncertainty”
- or to:
 - escape: drop out:
 - “I can’t stand college; all they want is right answers”
OR
 - “I can’t stand college; no one gives you the right answers”

calvin and HOBBES

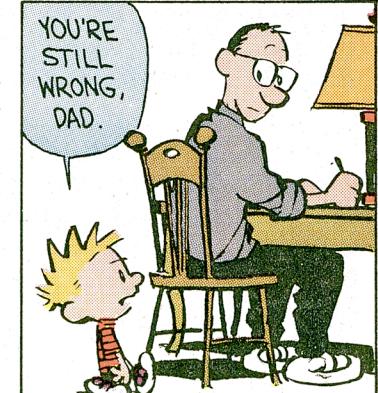
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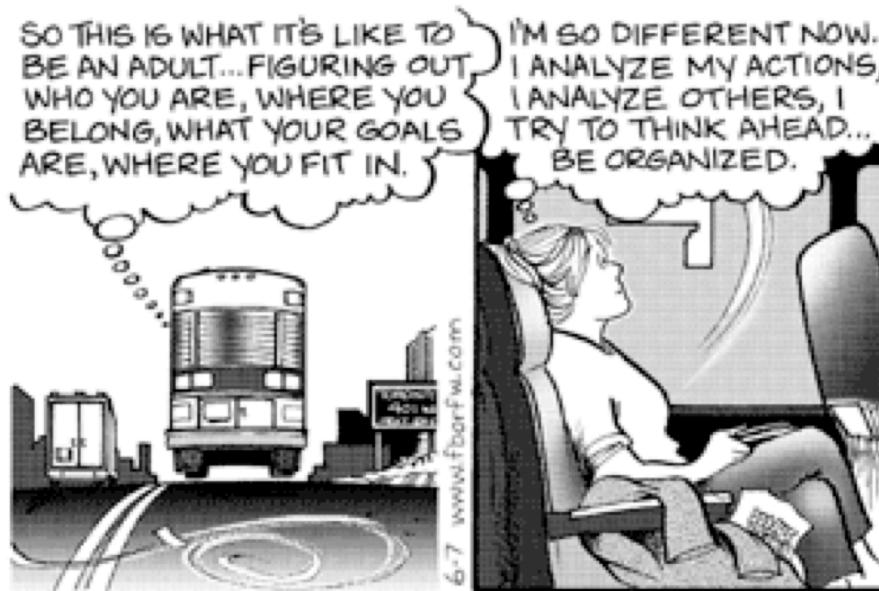


THE TRADITIONAL SINGLE VIEWPOINT HAS BEEN ABANDONED! PERSPECTIVE HAS BEEN FRACTURED!



THE MULTIPLE VIEWS PROVIDE TOO MUCH INFORMATION! IT'S IMPOSSIBLE TO MOVE! CALVIN QUICKLY TRIES TO ELIMINATE ALL BUT ONE PERSPECTIVE!





5. Contextual Relativism

- All proposed solutions must be supported by reasons
 - I.e., they must be viewed in context and relative to their support
- Within a context, there are:
 - Right/wrong (better/worse) answers
 - Rules for good thinking
- Student's task = to learn to evaluate solutions
- Where we'd like most students to be.

Contextual relativists ...

- Instructors:
 - Seen as source of expertise ...
 - as long as they follow contextual rules for good thinking
- Themselves:
 - Seen as studying different contexts
 - Seeing different perspectives
- Other students:
 - Legitimate if they follow contextual rules for good thinking
- On evaluation:
 - Evaluation of work \neq evaluation of self
 - Evaluation is part of learning
- Get support from:
 - Instructor
 - Diversity

Voice of Multiplicity Confronted with Contextual Relativism

- Comp Sci junior/senior in freshman discrete math:
 - “Since the material tends to be subjective, it helps to see the reasoning of another person sometimes.”

Voices of Contextual Relativism

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- Cliff Stoll @ UB:
 - “The answer is Markus Hess; now go home.
If you’re only interested in the solution, leave.
If you’re interested in good science
& want to know how I solved the puzzle, stay.”

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not possession but the act of getting there,
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- Einstein:
 - “The search for truth is more precious than its possession.”

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 - Dualistic question!

- What category am *I* in?
 - Dualistic question!
- How many people are in each category?

- What category am *I* in?
 - Dualistic question!
- How many people are in each category?
 - Multiplistic question!

- If teacher is at Perry position N ,
& student is at Perry position $N-2$,
then student will not understand teacher!
 - because...

Students Make Their Own Meaning: What Teachers Say vs. What Students Hear

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 - Only 3? Heck, I can think of a dozen!

Students Make Their Own Meaning:

What Teachers Say vs. What Students Hear

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- **Dualist:**
 - Which is the correct one?
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- **Multiplist:**
 - Only 3? Heck, I can think of a dozen!
- **Contextual relativist:**
 - What principles underlie the 3 methods?
 - Which is the most successful?
 - Which should I use on this patient?

If students make their own meaning, how can you help them?

- **Find out the students' Perry positions**
 - What was your favorite/least favorite class?
 - Why?
 - OR: just listen!
- **Then: Help them move to the next position!**

Your Goals as Teacher

- To challenge students,
 - So that they will move from dualism to multiplism to contextual relativism (& beyond)
- To support students,
 - As they move from the “comfort” of one approach to the strangeness of another

Example

- “How long should the paper/project be?”
 - Dualistic question!

∴ Give a **justified length**
challenge support

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+ your guess at T’s reply **[Late Mult/C.R.]**
- **Support:** Student chooses least threatening option
- **Challenge:** 2nd assignment = Do “next” alternative

Dualism → Multiplism

- Design situations that invite Dualists (R/W thinkers) to:
 - **experience multiple conflicting/alternative views**
 - **using high degree of structure to present each view**
 - syllabus
 - explicit assignments with due dates
 - outline of each class
 - handouts with requirements, hints
 - Have students **compare/contrast, explain answers, analyze**
 - If a student rejects a view,
have student be **concrete** about **basis for rejection**

Dualism → Multiplism (cont'd)

- Help students develop strategies to pick out major concepts or most relevant information in a section of text:
 - **challenge:** learning how to learn (rather than learning answers)
 - **support:** there are “correct” answers as to what’s important

Multiplism → Contextual Relativism

- Design situations that invite Late Multiplists (all opinions are OK) to:
 - **encounter multiple views**
 - **evaluate their relative merits**
 - via **own experiences (biographies, stories), others' experiences (small groups)**
 - **explicitly identify bases for disagreements among authorities/views**
 - **use low degree of structure**
 - **let students take responsibility for structuring own learning:**
 - negotiate syllabus, course content, due dates
 - individual contracts, use teacher as resource

Beyond the 4 Approaches

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- Student sees necessity of:
 - Making choices
 - Committing to a solution

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8. Challenges to Commitment:

- Student experiences implications of choice
- Student explores issues of responsibility
 - E.g., write & defend dissertation

9. Student realizes commitment is an ongoing, unfolding, evolving activity

- E.g., you become a researcher
- John A. Wheeler (physicist):
 - “We live on an island of knowledge surrounded by a sea of ignorance. As our island of knowledge grows, so does the shore of our ignorance.”
- All “Perry positions” are sometimes repeated!

Brief Overview of the 4 Approaches to Learning

2. Full Dualist

- all questions have answers
- some teachers know right answers & teach them
 - others don't, but teach them anyway
- student must learn right answers
 - and ignore others

3. Early Multiplist

- some questions have known answers
 - others have not-yet-known answers
- teachers know right ways to get answers
- students must learn how to find right answers

4. Late Multiplist

- most questions have no known answers
- teacher is source of thinking process OR is irrelevant
- student must learn to think for self (everyone has right to own opinion)
OR doesn't matter which answer you give

5. Contextual Relativist

- Answers must be supported by reasons
- Within a context, there are better/worse answers
- Teachers & students must follow rules for good thinking
- Students must learn to evaluate solutions

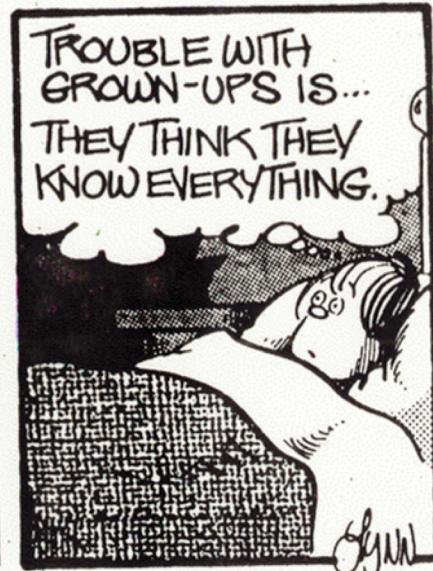
The Perry Scheme, Self-Referentially

- **Dualist:**
 - The Perry scheme is the best way of thinking about college students. Someone has finally told us how to make students change in the right ways.
- **Multiplist:**
 - Well, it's some people's way of talking about student growth and development, and they have a right to their own opinion, I suppose.
- **Contextual Relativist:**
 - It is one of a relatively few student-development models based on data collected in a fairly unbiased manner over many years.
- **Commitment:**
 - I have found the Perry scheme, integrated with other theories, extremely helpful to me as I try to interpret the behavior of people around me, as I think of my goals as an educator, and, especially, as I interact with my students.
- The Perry scheme attempts to analyze assumptions about knowledge, self, and values such as those implicit in the 4 descriptions above and in the ability to write this last sentence.
 - Larry Copes

Summary

- **Hear your students' voices:**
 - where are they're coming from on the Perry scheme?
 - then:
 - you can reply with answers that challenge and support
 - you can design assignments/experiences that help them journey along the Perry positions
- **Be flexible:**
 - try different teaching styles...
 - ... to **support** your students...
 - ... to **challenge** your students...
 - ... and yourself!

FOR BETTER OR WORSE



Further reading:

- **W.G. Perry's 2 main works:**
 - *Forms of Intellectual & Ethical Development in the College Years* (Holt, Rinehart, Winston, 1970)
 - “Cognitive & Ethical Growth”, in Chickering, *The Modern American College* (Jossey-Bass, 1981).
- **An interesting follow-up study:**
 - Belenky, M.F., et al. (1986), *Women's Ways of Knowing* (Basic Books).
- **Good general introduction & application to science teaching, with many useful further references:**
 - Finster, D.C., “Developmental Instruction”, *Journal of Chemical Education* 66 (1989): 659-661 and 68 (1991): 752-756.
- **Two of my own papers:**
 - Rapaport, W.J. (1982), “Unsolvable Problems & Philosophical Progress”, *American Philosophical Quarterly* 19: 289–298.
 - Rapaport, W.J. (1984), “Critical Thinking & Cognitive Development”, *Proceedings of the American Philosophical Association*. 57: 610–615.
- **For further information, go to:**
 - <http://www.cse.buffalo.edu/~rapaport/perry.positions.html>