Theoretical and Practical Reasoning:
An Intractable Dualism?

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From its inception, Western philosophy has both created and struggled against a variety of dualisms — God-and-Satan, ideal-and-material Realms of Being, *res cogitans*-and-*res extensa*, mind-and-body, ought-and-is, analytic-and-synthetic — each invented as a solution to a recalcitrant philosophical problem; all in time have proved untenable. The unity of the universe is such an overwhelming fact that eventually monotheism becomes the only acceptable theology and ontological monism the only acceptable philosophy — that is, the only stance acceptable to those who recognize contemporary science as something other than just another myth to satisfy an irrational human need for "answers."

 Dualism seems unavoidable, however, when theoretical and practical reasoning are properly distinguished. If that view is correct, then what has been called "The Great Debate" on critical thinking in education may require a shift of focus.[1] Rather than a theory of rationality, as called for by Professor Siegel,[2] an analysis of reasoning might better serve as a philosophical foundation for our arguments. It is hard to deflect the claim that we do not and never will have a theory of rationality;[3] after all "theory" is a philosophically contested concept and "rationality," quite a grand and abstract noun. Taking the more modest gerund "reasoning" as the object of inquiry, and analysis of concrete cases as method, may prove more profitable.

In that spirit, then, this essay seeks to distinguish theoretical from practical reasoning by retelling two stories, each adapted from a classic in the treasury of philosophy. In both cases, the key to understanding comes by noting reasoning's failure to produce an expected conclusion. Here, as so often, nature is discovered in her anomalies.

T-Reasoning

In explicating the theoretical mode, T-reasoning, this essay commits atrocious dismemberment on Lewis Carroll's "What the Tortoise Said to Achilles."[4] *He* tells it with many witty flourishes, illustrating his point with Euclid's First Proposition, which requires a three variable argument and a relational predicate. But here is the essence: Their famous race, despite its impossibility, being somehow concluded, Achilles now rides on the back of Tortoise. In the midst of a pleasant conversation, Tortoise mentions another race which would seem to be brief but in fact consists of an infinite number of steps and can never be completed. The first two steps are easily taken:

A. All men are mortal.

B. Socrates is a man.

But the end of the race Tortoise labels

Z. Socrates is mortal.

Why, asks Tortoise, must one who accepts A and B also accept Z? Well, says Achilles, the sentences above form a valid syllogism. Very well, says Tortoise, add that as

C. The form represented in sentences A, B, and Z is a valid syllogism.

"And why, pray tell," asks Tortoise, "does acceptance of A, B, and C require one to grant Z?" Achilles proceeds to provide a true D (say, "To assert A & B and then deny Z is self-contradictory."), E,...*etc*., while for several more centuries Tortoise becomes increasingly weary from his burden, and Achilles draws no closer to forcing acceptance of Z. To bring the story up to date, we might add:

Q. $Vx\ (Hx \longrightarrow Mx)$

R. Hs

S. Applying the rule of universal instantiation and *modus ponens*, Ms can be logically deduced from Q and R.

T. By interpreting H as the predicate "man," M as the predicate "mortal," s as the individual constant "Socrates," "Socrates is mortal" is a valid inference from Q and R.

All of which can be granted by Tortoise with no effect on his refusal to accept Z. Leaving us a moral which Professor Hodgson, speaking as Lewis Carroll, found needless to add: It really doesn't pay to argue with a tortoise.

For tortoises, at least on the evidence before us, have no rational compulsion to accept the conclusion of a valid argument just because they accept its premises. Whereas, once matters have been made as simple as A, B, and C, reasonably normal human beings will feel compelled to accept Z. That mild compulsion we may call rational intuition. Everything in logic and mathematics ultimately derives from it; if science can be said to require any foundation, rational intuition alone can supply it. T-reasoning, as the expression is used here, is the exercise of that rational compulsion which *requires* us to jump from A and B to Z, even as we acknowledge that those of a different kind, feeling no compulsion to go there, might never be brought by further steps to accept that conclusion.

P-REASONING

Possibly less well known is Norman Malcolm's study of logical necessity in the practical syllogism. Malcolm's way of telling his story diminishes its verisimilitude; it is here retold from scratch. But for those unacquainted with Malcolm's work, be assured that it is *his* story, just "*A Bissel Verbessert*," a little improved, quoting the Yiddish subtitle to a Hester Street production of *Hamlet*.[5]

Adam, our hero, had just been graduated from Cornell University and was attending a party with friends on the northern shore of Lake Cayuga. The party was raided by police who discovered no evidence of law-breaking other than one ounce of marijuana in Adam's pocket. Adam was seized, arrested, and put aboard a police launch for the long journey back to Ithaca. Once underway, the police removed his handcuffs and ordered him to sit quietly by the fantail. He hears his captors curse the maintenance crew for the inoperative condition of the launch's radio.

How, exactly, is the situation as Adam contemplates it? Given the draconian drug laws of New York State, he is certain to receive the mandated term of five-to-fifteen years imprisonment if brought to trial in Ithaca. Adam is a citizen of Canada; if he succeeds in escaping his police escort and making his way across the border before being apprehended, he is safe; for drug possession of this quantity is not an extraditable offense in Canadian law. He had parked his car, containing an extra set of keys and his Canadian passport, in the national forest that borders Cayuga's eastern shore and been driven to the party site by friends.

Adam notices that, as it turns south toward Ithaca, the launch will pass close by Bolton Point, a promontory on the national forest, very near where his car is parked. It is a beautiful spring day; Adam is a strong swimmer; no treacherous currents are found on Lake Cayuga. The chances are overwhelmingly on his side. If he jumps from the launch, swims to shore, and drives the half hour to the Canadian border, he will be safe from pursuit long before the clumsy old launch can find a suitable dock from which an alert could be sent. Putting all those conditions together, we may sum up Adam's practical ratiocination as:

1. Adam desires *very strongly* to avoid confinement in New York State prisons.

2. Adam believes that if and only if he jumps from the launch as it passes Bolton Point can he avoid imprisonment.

3. Adam has no reason not to jump from the launch and swim ashore.

4. No external cause prevents Adam's jumping from the launch and swimming ashore.

Regarding premise 1: For the point of this story, it is not necessary to say that he desires *above all else* to avoid imprisonment. We do not have to make him willing to risk his life or take the life of an innocent person in order to avoid his impending fate. But murder and suicide, let us say, are the only immediately available options he would want more to avoid than his inevitable conviction if brought to trial.

Regarding premise 2: "Believes" is the epistemic operator here, for such is the standard form of the practical syllogism. But the strongest form of belief is intended. We could well say "knows"; even better, because suggesting phenomenological immediacy, we could say "recognizes," as in "I believe that's Jones sitting at the head table…ah, yes, it is she, now I recognize her."

Much of Malcolm's essay is devoted to questions here summarized as premises 3 and 4. Adam has no fear of jumping, suffering not even the reluctance one feels when challenged to pass a finger through the flame of a candle. Adam is no Socrates who would force those who convict him to carry out their sentence; he has no moral compunction against evading punishment for violation of a law that he, like all civilized beings, considers arbitrary and unjust. Because of the broken radio, the police have not reported his arrest; Adam needn't be distressed to think that his relatively humane captors will suffer embarrassment when arriving in Ithaca without him.

In regards to premise 4: if you think of some X (say, that Adam suffered a *petit mal* seizure, or that a jealous Zeus took vengeance for Adam's amatory success at

the party, or…) that might intervene between the set of premises just given and the action indicated as their conclusion, Malcolm will hasten to add, "Oh, I forgot to mention, X did not prevent Adam from jumping from the launch."

Even so, Malcolm concludes this sad story with:

5. Adam sits quietly as the launch rounds Bolton Point and heads toward Ithaca.

THE TWO CASES COMPARED

Here we have two instances of reasoning in which a conclusion does not follow from premises as we expect it to. The strain toward monism makes us want to advance an explanation which will cover both cases. If we can do so, then the unity of reasoning has been preserved. If we cannot, then theoretical reason and practical reason share only a last name. That may make them members of the same family, in a Wittgensteinian sense, but not two modes of the same mental activity.

A lifetime of research is open to the scholar who wishes to trace this question through the history of Western philosophy. Thanks to Elizabeth Anscombe, we now recognize that Aristotle was somewhat confused on the matter.[6] So impressed was he with the power of his *Posterior Analytics* that he would have forced Adam's practical syllogism into the mold of major and minor premises, where failures to draw correct conclusions could be traced to mistakes in distributing middles. Unless we are dealing with quite corrupted manuscripts, his effort was weak and quickly abandoned. Recalling his position in the *Nicomachean Ethics*, that the higher and nobler virtues were intellectual where his logic *does* apply, perhaps he would argue that if Adam's reasoning does not fit his mold, so much the worse for the base and ignoble.

What exactly distinguishes our two stories? Consider T-reasoning: We are left with the logical formulae (say, those labeled Q, R, S, and T) together with a guarantee that if we follow standard rules governing such formulae, we will never be led to accept a false conclusion on the basis of true premises. That guarantee is comforting to our rational intuition, for now we can be certain of our *right* to follow our feelings and accept Z on the basis of A and B.

Now does Tortoise have an *obligation* to accept Z if he feels no inclination to do so, or even if, so feeling, he feels a stronger inclination not to? He has granted that the assertion of A, B, and not Z is logically contradictory. Psychological and political arguments of considerable weight may be advanced to show that, in general, one is prudentially advised to avoid logical contradiction in one's own thinking. Intellectual honesty, surely a moral virtue, requires us to shun logical contradiction in social discourse. In the present case, Tortoise might be prudentially advised to *say* that he accepts Z — perhaps Achilles will get off his back if he does so; but actually, to *accept* Z, to give up his fond expectation that he may meet Socrates in person on the next campus he and Achilles happen to visit, is not something Tortoise (quite human in this respect) *can do* just because he decides to. Ought still implies can. In short, the point Professor Hodgson would emphasize, even though Tortoise did accept the premises preceding, neither prudence nor obligation requires him to accept Z.

The contrast with P-reasoning is striking. If there is any meaning at all to the concept of prudential obligation, Adam *ought* to jump from the launch as it rounds

Bolton Point. As Malcolm wishes to tell the story, Adam *cannot choose not to jump*! For given the overwhelming reasons for jumping, he would have to have some reason for choosing not to, and we have specified that no such reason exists. Yet, and here is Malcolm's main point: in *no* system of logic is there a contradiction in the assertion of 1 and 2 and 3 and 4 and 5 above. Poor Adam suffers five years of sexual assault and other forms of brutality in New York State prisons while neither he nor any one else can form a rational explanation for his failure to act. Seen properly, the story simply makes no sense, but its senselessness cannot be accounted for by appeal to logical contradiction.

THE MORAL FOR EDUCATORS

As teachers, we salivate at the thought of awakening, strengthening, and extending children's innate capacity for logical intuition. We would not use a morbid example like Socrates' mortality to bring to their consciousness the sense of *necessity* we find so perversely absent in Tortoise, and Euclid's First Proposition is too abstract for first graders. Perhaps we would have them agree that all birds have feathers. We now meet Polly, introduced to us as a bird. What else have we reason to believe about Polly? As our acquaintance with Polly deepens, we discover, to our amazement, that she has no feathers! What other belief(s) *must* we change? Ah, to roam among virgin minds where the excitation of previously undiscovered senses may arouse a pleasure so pure!

Can virgin minds be found in school? Is there a school where children's capacity for intellectual excitement has not been hopelessly contaminated by the pseudo-sophistication of "family targeted" TV shows, still not irreparably dulled by competitive status striving, personal anxiety, addiction to caffeine and Power Rangers? Anecdotal reports and personal experience give us reason to hope. To find and trace that "golden thread of rationality" (R.D. Laing's expression[7]) is not an easy task, but its occasional accomplishment is so reinforcing that we can confidently expect teachers (at least the teachers *we* have trained) to persist in it despite the obstacles contemporary culture erects against them.

At a later stage in a school program devoted to "educating reason," we can well imagine adolescents enjoying the same sense of logical necessity in following a demonstration of probability. We take a slightly loaded pair of dice, roll them ten times, and find that four times they add up to less than eight, six times to eight or more. Do we have reason to believe that the dice are unbalanced? Some, but not much. We roll them ten times every day, recording the results. If at one hundred times the results stayed in about the same proportion, would we still trust the dice? Much less. A thousand times, still roughly six to four? Something is clearly amiss. Now why do we *feel* that way? What exactly is that feeling? Where do we find it elsewhere in our lives? However often or seldom it may occur in schools today, it is not logically incoherent to hold that such pursuit of T-reasoning could be, as we must all acknowledge such refinement of reasoning capacity should be, a central element in the school experience of all youth.[8]

But P-reasoning? A small thought experiment, if you please. Imagine an adolescent, say, Bert. Bert is a native speaker of English, apparently as normal as

most in that abnormal stage of human life. He hears our account of Adam's misadventure and then inquires in all honesty, "So what's hard to understand in that story?" Can anyone suggest a strategy for overcoming Bert's form of irrationality? Do you feel a pedagogical lust to engage that young mind in the further development and refinement of reasoning? Can you, in fact, even *imagine* such an individual concretely, except perhaps as a "brain-in-a-vat?"[9]

But wait! The devastatingly sad point is that to imagine Bert requires *no* special stretch of our sense of possibility. Bert is Everyone. He and all his peers of all genders have been taught a very simple syllogism.

1. *You* do what *they* tell you to do.

2. *They* told Adam to sit by the fantail till the launch reached Ithaca.

3. Adam sat by the fantail till the launch reached Ithaca.

"So what's hard to understand?" asks Bert. Does Adam's obedience constitute a self-destructive violation of his practical reasoning?[10] Hasn't he survived sixteen years or more of schooling, there every day being conditioned to erect an impassable barrier separating conduct from beliefs and desires? Hasn't he learned to relegate desires to the realm of fantasy: winning the lottery, seducing the beautiful girl next door — learned to relegate belief to religion or a counterfeit thereof: I believe in the resurrection of the Body, I believe in horoscopes?

Unless he happened to attend Summerhill or a close equivalent, has anything Bert ever done or heard in school helped him to recognize, clarify, refine, and deepen his desires — ascend the scale that Socrates attributed to Diotima,[11] or acquire a critical, organized system of beliefs about the major social, economic, and psychological conditions that determine what and how human desires may be satisfied in the real world? Even if he gained the intended benefit from courses in critical thinking, was he not there simply learn to think as and what THEY told him to think? In sum, has he not been living in an environment still accurately described in Kant's famous line: "Children are sent to school…with the object…that they may become used to sitting still and doing exactly as they are told?"[12]

CONCLUDING REMARKS

Let us take it as a matter of definition that the intersection in Adam's consciousness of premises 1 and 2 above generates an *impulse* to jump from the launch. It would follow, would it not, that education in practical reasoning requires an environment in which oncoming generations of youth may exercise, strengthen, clarify, refine, and *act on* their impulses? We can, albeit with difficulty, imagine such an upbringing. Children and youth might associate with one another in packs and gangs, age and sex segregated or integrated as socio-biological drives incline them. Parents and other adults would be required to stay in the background, ever ready to provide shelter, sustenance, comfort, love, acceptance, and solicitude in times of pain, and celebration of success, what Nel Noddings calls "moral conversation"[13] — whatever may help children to develop an articulate consciousness of their direct experience. Even in a postmodern, post-industrial society, such an environment for growing up is not a *logical* impossibility.

But would there be a place in it for the practice and perfection of T-reasoning? Imagine children who act in freedom, then suffer and enjoy the direct consequences of their actions. Within an environment where safety and challenge are properly balanced, children could learn, over time, what desires are desirable to entertain, what beliefs can be trusted to guide action to desired consequences; in short, they should learn to *control* their impulses — which implies not only *learning what* impulses to act on and what impulses to re-direct, but also *learning to act* as practical reason dictates.

The idea of such an upbringing strikes harmonious utopian chords in every true educator's soul. But still the same question remains. Would children whose upbringing had been thus practically engaged ever feel an impulse to sit quietly while being introduced to our featherless Polly, patiently roll dice and record results, turn inward to find and honor that delicate (and, to those who cultivate it, delightful) sense of logical necessity? Thus the dilemma: if our goal of "educating reason" is defined strictly as cultivation of T-reasoning, we could find ourselves teaching in schools not radically different from those we know now. But authentic practice of P-reasoning cannot be accommodated in a setting where "they're not here because they want to be here, they're here because they have to be."[14] In such a setting they learn to *suppress* impulse arising from intersection of belief and desire or, in striving for autonomy, learn simply to *express* impulse directly it arises. But under conditions of "normal" schooling, it is a minor miracle when a child learns to con*trol*, to consciously choose to act or to not-act on impulse. While under conditions where their conduct *is* guided by consciously directed impulse, children's patient practice of T-reasoning would be an equally miraculous occurrence.

The exit from this dilemma, if there is one, may come through appeal to a further distinction in Aristotle's analysis of human reason. Distinct from both theoretical reason and practical reason in Aristotle's scheme stands poetic or productive reason.[15] Theoretical reason guides our thinking, practical reason our conduct, productive reason our making and building, our practice of the arts, fine and mundane. The logics, that is, the skeletons or forms, of both theoretical reason and practical reason are clearly delineated. On the first of those neatly stripped models are built our physical and mathematical sciences; historical explanation, the clinical practice of psychotherapy, theories of rational choice, politics and economics, *mens rea* in legal prosecution…all follow the second model. But the reasoning that guides our practice of the arts, supremely, of course, the art of self-development, cannot be reduced to either, nor to an impossible combination, of those two logics.

A neo-Deweyan might conclude by saying: The philosophical foundation for a program of education transcending the dilemma here posed will be found in the logic of productive reason — a form both social and individual, and one that integrates the intellectual, the appetitive, and the emotional aspects of life — a logic far more complex and sophisticated, than the stripped-down formal and practical models shown above. But what reason have we to suppose that such a logic exists? Or that, even if there is such a logic, it could ever be formulated as a useful guide to the practice of education? We are probably better advised to keep the form of P-

reasoning before us and ask as a united profession of education, What form(s) of social upbringing do we *want* to build? As members of the community of scientific scholarship, what practical, political action do we *believe* most likely to achieve the ends we seek?

Focus on the desire premise in our practical syllogism: Taking the aesthetic component of experience as the profound element of life that Arnstine portrays it to be, can we not extend it to envision a form of human upbringing where children and youth self-consciously engage in building their individual characters while cooperatively re-building their world, practicing T-reasoning rigorously and P-reasoning courageously?[16] Can we not envision a political and economic order in which such an upbringing would fit, as it were, naturally? As we work collectively to create such a society, our *practice* of productive, poetic *politics*, more than any formulae we could ever prescribe, will serve as a guide to productive reasoning for our students.

1. Mark Weinstein, "Critical Thinking: The Great Debate," *Educational Theory* 43, no. 1 (Winter 1993): 99-117.

2. Harvey Siegel, *Educating Reason* (New York: Routledge, 1988). See particularly "Postscript: Toward a Theory of Rationality," 127 *et seq.*

3. Christine McCarthy, "We Don't Have a Theory of Rationality, and We Never Will — A Philosophically Pragmatic Point of View," in *Philosophy of Education 1994*, ed. Michael Katz (Urbana, IL: Philosophy of Education Society, 1995), 74.

4. Lewis Carroll, "What the Tortoise Said to Achilles," in *The World of Mathematics*, ed. James R. Newman (New York: Simon & Schuster, 1956), 2402-05.

5. This example appeared in a paper Norman Malcolm presented to the philosophy symposium at SUNY Albany in *about* 1976, with a title *like* "Practical Reason and Logical Necessity." My copy of that paper has disappeared, and no record of its publication can be found. Any further information on that source would be received with undying gratitude. My apologies for re-arranging the geography of the Finger Lakes. The law is described correctly.

6. G.E.M. Anscombe, *Intention* (Oxford: Basil Blackwell, 1956) The citations from Aristotle are *De Motu Animalum* VII and *N.E* 1147.

7. R.D. Laing, *The Politics of Experience* (New York: Ballantine Books, 1968).

8. Under conditions as specified in Siegel, *Educating Reason*, 115.

9. Hilary Putnam, "Brains and Behavior" in *Analytic Philosophy*, ed. R.J. Butler (Oxford: Basil Blackwell, 1965).

10. Technically speaking, Bert's explanation of Adam's irrationality is not a case of *akrasia*, self-deception, nor false consciousness. If Adam fails to jump because he has internalized Bert's syllogism, then his is a case of MCNR, a mental cause that is not a reason. That *they* told him to sit quietly does not give him a *reason* to sit quietly unless: (i) He fears the consequences of acting otherwise. Or (ii) He respects *their* authority and the rightness of *their* orders. Or (iii)…All of which are eliminated by our premise 3 above. On Bert's explanation the police order is the mental *cause* of Adam's behavior, though it does not constitute a *reason* not to jump. See D. Davidson, "Deception and Division," in *The Multiple Self*, ed. Jon Elster (Cambridge: Cambridge University Press, 1985), 79-92.

11. Plato *Symposium* 201-12

12. Immanuel Kant, *Education* (Ann Arbor: University of Michigan Press, 1960), 3. From lectures given c. 1795.

13. Nel Noddings, "Conversation as Moral Education," *Journal of Moral Education* 23, no. 2 (1994): 107-18.

14. "Miss Baker," quoted in Greta Morine-Dershimer, "Practical Examples of the Practical Argument," *Educational Theory* 37, no. 4 (Fall 1987): 398.

15. "The arts, both fine and applied, are included with ethics and politics among the practical sciences broadly conceived…but in a stricter sense the arts are contrasted as 'productive' with morals and politics, which are 'practical.'" Richard McKeon, "Introduction" to *The Basic Works of Artistotle* (New York: Random House, 1941), xxix. See *Pol.* 1253 and 1337, *de Part. Anim.* 687.

16. Donald Arnstine, *Democracy and the Arts of Schooling* (Albany: State University of New York Press, 1995).