

Dissertation without tears, p.1

Gerhard Zecha, ed., Critical Rationalism and Educational Discourse, Series in the Philosophy of Karl R. Popper and Critical Rationalism, Amsterdam and Atlanta GA: Editions Rodopi, 1999, 59-89.

Dissertation without tears

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1. Perfectionism is the loss of the sense of proportion.
2. Perfectionism in education is pedantry and obstruction.
3. Pedantry expels traditional writing techniques.
4. There are many ways to write a scientific study.
5. The best and easiest writing formula is the dialectic.
1. Perfectionism is the loss of the sense of proportion.

Perfectionism is an expensive ambivalence boosted by a lack of a sense of proportion. It is the recognition of the impossibility of achieving perfection coupled with the inability to ever desist from efforts to attain it. The philosopher R. G. Collingwood suffered from it, yet he was a splendid and prolific writer. In his autobiography of 1939 he explains how he managed to publish as much as he did: the victims of perfectionism are simply forced by their environment to let go of their products: art dealers snatch canvases of art from their makers, friends send authors' unfinished manuscripts to the printer, and so on. Learning this fact, Collingwood confessed, was a great relief for him. It is strange that he had to discover the fact, as it is so common. It is presented in Plato's famous dialogue Parmenides. The opening scene there has Zeno reading his book with youngsters and carefully interpreting it to them. Young Socrates sneers at this, as he finds it pretentious. The sneer upsets Zeno, who nevertheless admits some justice to it: he had not finished writing his book, he admits, when friends snatched it from him and published it though it was not quite complete.

Being an ambivalence, perfectionism is resolved by forcing decision on others, but only ambivalently, and so only seemingly so: masters can resist attempts to force them to let go; to begin with they do resist. Resistance

Dissertation without tears, p.2

declines as the master become ambivalent, and the ambivalence increases with the increase of the need to decide that the opus is more-or-less finished. Perfectionists refuse publication when they are clearly dissatisfied, and they will not permit it even when they realize that possibly they are satisfied; rather, they then force others to decide for them as if against their will. Only when their anxiety is not too pronounced do they acquiesce in the decision to have their work published.

Hence, the excuse offered by Zeno and by Collingwood -- that the decision is made for them by others -- is not quite honest. Ambivalent makers simply prepare scapegoats to blame for their own shortcomings, as a means to avoid taking responsibility for their actions. The reluctance to own up responsibility is somewhat softened as the fear of criticism is softened by having someone else to blame for one's decision to allow an imperfect work to be considered finished. And such a decision is judged faulty whenever that work is criticized. Plato describes Zeno as exhibiting pride over his book until he is challenged by young Socrates; he then admits his book's defects, but refuses to accept responsibility for them. This refusal is costly, as it prevents one from being proud of an imperfect work, which means that one can never be proud of one's work, as it is never perfect. Yet, perfectionists are often proud of their work. Often they find hard work as permission for that, which is silly, as some great advances are born painlessly, whereas much work is not rewarded.

As ambivalence is the refusal to accept responsibility for one's action, it is a form of cheating; it is the eagerness to be praised coupled with the refusal to face criticism. The ambivalent individual sends an unspoken message: praise me/my output if you can but do not disagree with me/it and do not criticize me/it. Now the abiding by idea that criticism is the opposite of praise is simply devastating, as the love of praise and the hatred of criticism must clash, because to deserve praise one should improve and to improve

one should face criticism. Praise and blame signify little as compared with whether an appraisal is just or unjust; but even this is of little significance as compared with the question, what can be learned from the appraisal.

Learning is prevented by the fear of disagreement, criticism and censure.

And, of course, what matters for learning from an appraisal is precisely the question, what justice is there to the high or low appreciation, to the regard or the disregard, to the praise or the blame, to the expression of agreement or of dissent. In order to improve the ability to face critical appraisal has to be developed, be the appraisal coupled with high or low appreciation, with regard or with disregard; they have to be judged as just or as unjust and be put to use accordingly.

Perfectionists cannot notice the most significant facts about criticism, as these require some sense of proportion. First, only if the appraisal of the output on the whole is high, is the low appraisal of a detail within it capable of leading to significant correction and thus to improvement. Second, general criticism may be valuable, regardless of the worth of any detail. Hence, general criticism precedes the criticism of details. This observation is ignored by almost all academic coaches, who thus waste much time on worthless detail, though it is an observation that all responsible people recognize as a matter of course. For valid criticism to be useful, some sense of proportion is essential, though it is always possible to benefit from taking seriously other people's considered appraisals, and it is advisable if it does not cost too much time. How much is not too much is a matter for a sense of proportion. Perfectionism prevents noticing all that, obvious though it is. Perfectionism obscures even the possibility that a highly favorable appraisal may be coupled with some severe, hopefully helpful criticism. They love to dismiss as worthless much of what is presented to the public as criticism. This is in principle erroneous: all criticism is tribute. This is philosophically most important. It was beautifully stressed in Plato's Gorgias, where it is declared that correcting errors is helpful, and so it is a favor. It is the

Dissertation without tears, p.4

cornerstone of the fallibilist critical philosophy of Karl Popper: intellectual progress as the outcome of the invention of some solutions to given problems coupled with their critical examination that raises more problems.

Perfectionists know that seeking high appraisal while refusing or resenting low appraisals is improper. They often try to be fair, however reluctantly, and even though only after they pour unjust wrath on their critics. They are thus able to face critical appraisals in a somewhat adult fashion even though only despite themselves. This takes them much effort, as their initial reaction is distinctly not adult. Only after they go into lengthy processes of denial and rejection can they face the criticism in a more disinterested manner and appraise it in a balanced way, with some measure of a sense of proportion. This is more expensive than they will admit. It would be nicer had they noticed that they should be a bit more perfectionists in their attitude to criticism and to the low appraisals of their output, had they tried more sincerely to behave like adults. This would kill their perfectionism, and they will then decide either to cease producing or to approach their output more judiciously.

Perfectionism is the ambivalent absence of a sense of proportion that is expressed as the inability to distinguish a fault that is unacceptable and must be corrected from one that does not matter over much. It is chiefly the inability to distinguish the defect in the purpose of the exercise from the defect in its execution. Making this distinction is the chief task of coaches, as is drawing the attention of their charges to it. A good coach, it is well-known, is one who knows what defects are to be eliminated first and what defects should be treated if they do not vanish without treatment.

Perfectionist coaches are called pedants and are known for their high irritability and their inability to tolerate any error. Their pedantry is an evil yet it may be rewarded. The genuinely pedantic coaches, however, are a very special case: in their excess irritability they can hardly act under normal

circumstances, but they can be superstars and then they drive their charge to tremendous worldly success at the cost of making their lives unendurable: admired by all they are also hated by their charges. Fortunately, very few real pedants manage to get to the top, and most of them are eliminated and either find employment elsewhere or live as coaches on the margins of their professions.

This illustrates the fact that some ambivalence is paralyzing but not all. This fact holds for all ambivalence, perfectionism included. It is interesting and useful to find out which is which. For example, the pedantic coach can cause and enhance ambivalence and thus paralyze their trainees. Yet, pedantic coaches who are top experts may have spectacular results. They may become coaches for the most famous trainees and lead them from success to success, but only in the short run, as they also destroy them. They cut the branches on which they sit, but they are often able to bounce from one branch to another thus compounding the damage. When they finally burn out, they move from the center to the periphery: burnt out coaches are endemic to the fringes of fame and glory which the fringes so obviously envy.

Perfectionism is then the ambivalence expressed in the lack of a sense of proportion that is not so utterly paralyzing as to be eliminated by natural selection. This is so especially in the academy, where competition is hardly fair and as most instructors are tenured. (Tenure should be treasured, yet it should not be abused as license to torture. Also, the choice should be admitted between tenure and high salary.) Academic perfectionism becomes endemic and is inherited from generation to generation. Its true cause, then, is the likelihood of ambivalent individuals to achieve positions that demand decision, especially positions of power (as these always demand decision). Professors today have to publish, and many of them are so ambivalent that they can hardly write; their inability hides behind the perfectionism that is

Dissertation without tears, p.6

pedantically transmitted to students.

This is not to say that all pedantic professors are perfectionists: however rarely, some professors are ambivalent neither about writing nor about publishing, but about supervising dissertations. They then become pedantic supervisors and destroy their students' ability to write. At times, they manage to get their students to submit dissertations and stop writing. If these become professors, then they do a terrible job as instructors. If not, the damage done to them by their professors is hardly ever noted as they drop out of the system for want of publications.

This is generally true: universities are terrific places in ever so many respects; they notably stand out as the rare institutions that do not penalize their members for personal achievement. Being so excellent, they can easily hide their defects. This is accentuated by their public-relations officers who must praise the achievements of the university and of its achieving members and former students but who may not report failures. The universities that are praised as the leading institutions of research and of higher learning are usually quite good, and they can recruit those whom they judge to be the very best. And they endorse uncritically the criteria of quality that are publicly recognized as proper. Even if their students have no chance to benefit from enrollment there, they may graduate successfully, both because they had proven their ability to excel by established criteria and because of the reputation of their schools.

Thus, the success of top institutions is self-perpetuating, and the damage they cause is unnoticed or put into perspective as against their enormous success rate. The lack of perspective involved, namely the uncritical re-endorsement of the established criteria, is understandable: these have to be reassessed either in times of crisis or, if crises are to be averted whenever possible, by philosophers and social critics, yet it is naive to expect this of the established philosophers and social critics or to expect established

institutions of higher learning to listen to philosophers and social critics of the opposition. This will change one day, when democracy will be recognized not only in the national politics but also within sectors of society and within public institutions. But for the ones who suffer from the imperfections of the current situation this is no solace, and the fact that the imperfection that causes the suffering is perfectionism makes things still harder to attend to.

2. Perfectionism in education is pedantry and obstruction.

Perfectionists tend to become pedantic coaches and teachers; their excessive pedantry is harmful. At times, it is met with some resistance or criticism. As they are blocked by their perfectionism and unable to accept responsibility for their failures, they often blame their ill luck. In an urge to overcome it, they bleakly try to coach, and then they violently pass their ambivalence and pedantry to their charges, thus instilling perfectionism and pedantry making them endemic. Failed pedants spread their disease rather than improve. Most infectious are those who complain of lack of appreciation.

Fortunately, by-and-large this failure is evidence that the process is checked somewhat. Excessively pedantic coaches are highly irritable, so that they are wretched company, so that they may remain as coaches only on the periphery, except for the spectacularly successful among them. This, then, keeps things more-or-less in equilibrium, and the cost of having had bad teachers is not too high.

The exception to this is the academy; academic pedantry is often praised, at times tolerated, and never objected to -- though it normally causes much harm, especially to graduate students. Academic coaches are excessively pedantic much more often than other coaches, and much more often excessively irritable. Yet, they are praised by their peers as careful scholars and their antics are usually deemed charming; they are especially praised as

conscientious supervisors of doctoral dissertations. The term "supervisor" indicates that candidates for doctorates need little coaching and can do well with mere supervision, with mere overseeing. In line with this, many supervisors regularly evade their charges, and when cornered they quickly wriggle out by demanding of them to read more, to write more, to annotate more, to polish their presentations more. When this tactic succeeds so well that their charges disappear in frustration, they feel guilty, and then they praise those among them who spend much time in expressing their irritation to their charges. For the doctoral candidate it is a no win situation, and there is no appeal.

This seems to be an impasse: supervision is futile if it is perfunctory and it is futile otherwise. It is futile if it is pedantic. Unfortunately, even if supervisors who are able scholar with a sense of proportion meet with troubled graduate students, because of earlier pedantic training. In principle, supervision of dissertations should be light, but often candidates need much help and advice, as the result of the harmful coaching that goes on throughout the educational process.

In North America, all professors who belong to the graduate schools of their universities qualify as supervisors, as coaches for writing dissertations. The routine disastrous coaching there is somewhat ameliorated by the younger instructors in coursework (undergraduate and graduate); it is encumbered by the addition of the newly founded profession, now increasingly popular there, of writing experts whose skill, if it can be called that, is the one imported from the high school composition classes to universities via the English departments there: the resultant untold damage has intensified the problem, and this led to the installment in colleges across the continent of new writing-aid programs. It should be noted, however, that the very idea of teaching writing in universities, whether "creative" or ancillary, is an asset in that it is the official recognition that the popular view that everyone can

Dissertation without tears, p.9

write is an error. Just as not everyone can sing even though in a way everyone sings, so not everyone can write. Yet most students are convinced that they are able to write, or should be. Yet this is denied by the very institution of these courses as writing aids or as remedial courses, akin to remedial courses in reading; they were instituted on the supposition that teaching one to write an essay is like to teach one to read, the supposition that what one learns in high-school should suffice for writing an academic work. Amazing.

Central Europe is notoriously more plagued with pedantry than North America. But the way it is expressed in universities there is somewhat different, and will remain so at least as long as it is much harder to find there than in North America such student conduct as open and friendly criticism of professors and speaking with them in egalitarian fashion. (Unfortunately, though egalitarianism is becoming more common among some academics, especially in the natural sciences, this is not easily transferred to relations with students, due to the demonstrative rudeness of German students towards their professors, the poisonous left-over of the students' rowdiness of some decades long ago, that is now regularly confused with egalitarianism.) The distance between supervisors and their charges makes pedantry both more common in Europe than in North America, but also more livable with, as the students who go for graduate studies there are better prepared for it. Pedantry there is still unacceptable, but it incurs less suffering than in North America.

The most important peculiarity of academic coaches as compared to other coaches is not so much in the fact that (except for the writing "experts") they still are hardly trained as coaches: coaches in many fields lack any training as coaches anyway. It is that the academic coaches possess enormous powers that are hardly limited by law, regulation or custom. There is too little control of the harm teachers cause anyway, but none more than

the academy, particularly the graduate school. The defenselessness of graduate students is surpassed only by that of inmates of total institutions. It is expressed in many heart-breaking ways that will be ignored here, as the discussion here is limited to the writing of dissertations. This is a specific matter, as most professors have no idea about what is required of a dissertation.

It is hard to know what is required of a dissertation. All manuals concerning graduate studies declare that a dissertation must include a new contribution to human knowledge. This is absurd on two grounds. First, most dissertations are immensely remote from anything innovative, no matter how this is judged. Second, there is no instituted criterion of novelty. That this is the case can be seen from the comparison of the situation in general with that in departments with strict standards. Though such departments are not free of all problems, nor even of pedantic supervisors, the fact that there students are taught how to write a report throughout their studies and that the requirement of a doctorate is fairly standard, makes the life of a graduate student there much less frustrating than elsewhere on campus. How do supervisors elsewhere approach their demands from graduate students? The answer too often is simple: they do not know. It is in general a matter of fairness to let students know in advance what is required of them, and in a manner that will help them decide whether they wish to stay or not. This means that the educational system, including the professors, should treat students as adult. Not a century ago even undergraduates were taken to be adults, but this was in an authoritarian, elitist, undemocratic system, and the problem is, how can the democratic achievements of the system be kept and the students be increasingly treated as adults.

Unfortunately, the authoritarian philosophy of Thomas S. Kuhn is popular today, especially as he endorsed the defeatist idea of Michael Polanyi that researchers should follow their instincts without being able to articulate their

views, let alone justify them. Polanyi said clearly that students who enroll in a program cannot assess the wisdom of their decisions and so they should not try to reason but rely on their teachers. This precludes any proper planning of instruction, even in the presence of a high rate of attrition. This is unacceptable, especially in hard times.

The advice to trust specialists is popular; it scarcely needs the support from Polanyi and Kuhn. Yet, it clashes with profound democratic sentiments. At the very foundations of democracy lies the distrust of any authority. The leaders of professional organizations behaves in accord with the view that public trust in specialists is in the interest of specialists. They are in error. The blind trust in specialists easily turns into distrust when something goes wrong, and then they are defenseless, whereas the means of democratic control will weed out irresponsibility and exonerate the innocent. The frailty of trust puts unfair pressure on the conscientious and invites intrigue and manipulation from the unscrupulous.

To take graduate supervision as an example, the supervisors who are conscientious fear derision from colleagues, and those who are not will deride peers out of political concern and regardless of the merit or demerit of the case. Consequently, the conscientious supervisors will raise the requirements from their charges still higher, and the demand from a successful supervisor will be not conscientiousness or intellectual ability, but the ability to wield political power -- in the universities, departments, or the professional societies.

The make-up the average doctoral dissertation supervisor, conscientious and ruthless alike, is a combination of their technical ineptness and the absence of controls in local politics. This causes too much agony and too much damage. Even the damage due to the mere hesitation of the academic coaches is excessive; instead of encouraging the doctoral candidates in their charge they express their hesitation by adding demands from candidates

Dissertation without tears, p.12

thus postponing the completion of the task (at times indefinitely), demanding over-documentation, irrelevancies and similar endemic afflictions caused by the supervisors and shaming the candidates.

(The inability to get rid of the afflictions endemic to doctoral dissertations makes many beginner supervisors suggest to their charges to choose topics where these are least damaging. This is capitulation before the struggle begins. But it is also the less pretentious and so less costly as the candidate is more likely to know what is the requirement that will lead to a successful completion.)

The democratic reform of education must introduce controls over the power of all educators everywhere, so as to check the abuse of power. It is urgent, but it will not come early enough to help current graduate students, who thus need medicine that is less potent but of powers for immediate improvement. This requires a closer examination of the ills involved: powerful medicine can dispense with the niceties of detailed diagnosis, but for the immediate alleviation of suffering, some details are essential.

The trouble is not so much due to ill will but to the social conditions of the academy (and these require reform). Ill will is not absent from the academy, but it is diagnostically less significant than the endemic ignorance and cowardice of supervisors. University professors are notorious for their irritability, animosity, bitterness and sense of frustration. This is so because unwittingly the academic system rewards these qualities, simply because it fails to control them: academics who torpedo colleagues' careers or who are engaged in smear campaigns are not penalized even when caught red-handed, and they can use these qualities for the enhancements of their own careers and for the attraction of naive and gullible graduate students.

This sounds very troublesome, but miraculously it is of limited harm, particularly because not all real scholars are barred from the academy, and

the real scholars who have managed to infiltrate the system are tolerated by it, and even by their evil colleagues, simply because they usually keep out of academic politics and out of intellectual politics in general and they are even ready to ignore the smear campaigns that are periodically conducted against them. The result is that their works are known not to the general public but to the experts who live off of them, and so the graduate students are likely to be ignorant of their possible contributions as doctoral thesis supervisors. At times students may learn about them and still not utilize their services, for fear of harm to their careers ensuing from allying themselves with professors who are (intellectually able but) politically uninvolved: these students are ambivalent about working with such professors, and their ambivalence is expressed not by some improvable, useful action, but by the all too understandable inaction that coaches are unable and unauthorized to help overcome.

This may be deemed quite satisfactory for almost everybody, but not for the victims of the system, especially not those who have spent years on their dissertations without being able to finish. To them this essay is offered as powerful medication: they need not believe anything of what is said here, especially not if their own predicament is different from what is described here; if they are desperate enough, they will try it; if not, then they thereby refuse the help here offered, and hopefully they will do well without it.

3. Pedantry expels traditional writing techniques.

Pedantry hinders the use of simple traditional writing techniques that may enable one to get easily through writing a semester paper or a doctoral dissertation. Graduate students who are stuck writing their dissertation need help, and often the help that they need can be provided by very elementary and very traditional coaching. But they neither have access to it nor do they desire it, partly from ignorance and partly due to the following Romantic superstitions that prevent them from using the simple techniques that they

desperately need.

Some creative people act -- paint, compose music, write -- with no idea as to how they succeed: they just do what seems to them to be right at the time, from the beginning to end, and they even know when to stop without knowing how or why. Even usually deliberate acts, such as the architectural design of a house, are performed by some individuals with no deliberation at all, either due to long training or due to sheer genius. Such works are left for others to deliberate about, to check, and to learn to emulate -- thus translating more spontaneous output into formulas. Due to the influence of the Romantic tradition the success of spontaneous geniuses is declared the attainment of perfection and is taken as proof that creativity requires spontaneity. This is false: no work is perfect, and spontaneous creativity is neither a necessary nor a sufficient condition for success: examples abound of poor works spontaneously created, and many great works that sound spontaneous were created with careful design and painful correction. (Some ingenious masters appear spontaneous, yet their work systematically emerged out of very hard work and of examinations of innumerable variants. Beethoven and Dostoevsky are the paradigms here.

Romanticism influences many aspirants to be creative and to look for a magic formula to put them on the right track where they will need no formula for creating what they want to create, and with perfect success for the first time. They are appalled when they hear about any formula as to how to do what they wish to do, just as they are appalled when they are repeatedly advised to try to improve their product; the suggestion that they might follow a formula and do so repeatedly raises their indignation even more than the suggestion that they should change their product. They expect every opus, a work of art or a scientific essay or anything else, to grow spontaneously like flower and then it should not be tempered with. The suggestion that they should alter their opus sounds to them a slight on their

Dissertation without tears, p.15

ability, since creative people need not and cannot improve their output, unlike those do who mechanically perform routine jobs of little or no value.

Romanticism equates the perfect with the ingenious and the prevalent with the slavish; it polarizes creators as well as their output into the perfect and the dull. For most of us, not being geniuses, to live by this formula, is to have no self-respect. Followers of Romanticism attempt to recruit self-respect by bleak efforts to create a perfect work, and in one go. And so, almost invariably attempts to live by the Romantic philosophy discourage and lead to sure failure. One should not blame this failure merely on the influence of Romanticism: admittedly, it recommends that only geniuses innovate, but it also recommends that the rest of us perform some routine work, and that we do so by following tradition slavishly.

This is the moral dimension of perfectionism: it suggests that we should not be content with routine replications of old work as this characterizes worthless people; it suggests that we should try as hard as we can to innovate. It recommends that we try as hard as one can to do the impossible. This sounds very high-minded. Incidentally, this is how young Ludwig Wittgenstein felt, and so he declared his early book both beyond the slightest change and a work of great value or of no value at all. He criticized himself ruthlessly and was quite eager to admit that his output is worthless - if only this could be shown to him to his own satisfaction. Yet high-minded and self-critical attitudes of this kind are often sham, however, and it leads invariably to contempt for ordinary people, which contempt translates into politics as anti-democratic attitudes.

Romanticism is misanthropic as it suggests that individuals are worthless unless they create. (Freud said, he would commit suicide when he ceases to be creative. Kafka said, on days without creative work he was dead.) Its victims often fail to notice its misanthropy, as they are all too ready to accept the harsh verdict and admit their worthlessness; this way they prove

Dissertation without tears, p.16

to themselves that they are sincere and their sincerity proves to them their highly moral character. This is often a mere self-rejection, and this only seems to be moral. Bertrand Russell has noted that self-rejection leads to the rejection of others and thus to misanthropy. It is thus a mere self-deception and an immorality.

Romanticism is very far from the truth, since no work is perfect and since most of us are neither geniuses nor clones, and particularly since the value of individuals does not depend on their ability or inability to create.

Romanticism and the suggestions based on it should be replaced by some more balanced view and suggestions. To avoid viewing people as either geniuses or slaves to traditions we should notice that the suggestion is useful to follow traditional ways to begin with and not too closely, but also to develop some readiness to deviate from tradition, and that people should not fear deviating from tradition as tasks and problems may demand.

Perfectionism need not be the Romantic search for the exceptional; it can also be the clinging to the routine formula too, and this may be Romantic too. The ambivalence perfectionists display may also be rooted in Romanticism, as it may be the vacillating between the search for the utterly novel and the following of the formula to perfection. Be it as it may, the responsibility for perfectionism cannot be that of a philosophy, as it is ultimately the responsibility of the perfectionist individual.

Perfectionists are stubborn. They may draw their power to resist from Romanticism or from ambivalence or from any other source. In any case the resistance is sham, as it is the resistance to coaching, and one is better off either dismissing one's coach or, still better, gain from the coach techniques without undertaking to use them later on. The resistance to coaching is thus rooted in ambivalence; and ambivalence may invite therapy. The present essay overlooks the need for therapy, on the supposition that critical argument is better than therapy as it may suffice or else suggest to its

victims that they are in need of therapy and then they can take it from there. And so we can glance at some useful traditional techniques and see how they can be used to counter perfectionism.

It was Tolstoy who saw the trouble with Romanticism. He contrasted it with functionalism: an composer who searches in a vacuum the proper musical idea is lost, but one who writes dance music or a funeral march has a clear task and a framework for it. Tolstoy was an extremist in his esthetic theory, but here we are not concerned with esthetics. Suffice it to notice that young academics find it much easier to write a book review than a paper, much in agreement with his precepts. What has this to do with the task of writing a semester paper or a doctoral dissertation is hard to fathom, unless the rules permit to submit reviews as the execution of the task at hand. The reason for the difficulty is that tasks of writing within the academy are ill defined to begin with. Let us notice this before going to the examples of formulas for the executions of the tasks.

Most coaching relates directly to the task at hand. The rules they teach and the exercises they supervise are traditional, at most slight variations on them. The rules, however, often are useless for real work and are, at best, preparatory, like five-fingers exercises. The advisability of such exercises is often questionable, and the damage they cause is often obvious, yet teachers and coaches are slaves to tradition as they find no way of breaking from it except by proving themselves geniuses, and most coaches are not geniuses. Five-finger exercises are damaging in that they train for bad habits and in that they stifle creativity. When it comes to the field of non-fiction writing, the worst traditional habits are those acquired in early writing training, especially some traditional prohibition -- against repetition, even of expressions, against talking about what one is talking about (against the use of the meta-language, so-called), against shooting from the hip, that is to say, against uninformed writing, and, above all, against disputation.

These rules are partly due to ignorance, partly due to authoritarian teaching, and largely due to anti-democratic authoritarian philosophy. To show this it is easy to take an example from speech habits. The most forcefully imposed unjust rule is that it is rude to interrupt other people's speech, to talk before one's interlocutor has finished talking. This is an invitation to the bore to monopolize a conversation. Some bores even take a breath not between sentences but in the middle of an expression, so as to impose this rule and prevent their interlocutors from taking any end of sentence to be the end of a move in a conversation. The rule is sanctified by teachers who are bores. Now clearly, since it is imperative to interrupt sometimes, this rule creates unnecessary tensions. Some interruptions are very rude, to be sure, as for example, that of people who block answers to their own questions. Yet at times even that is permissible, for example, when one wants to say, sorry, I made a mistake and asked a question different from the one I should have asked. Let me stress this, since the easiest writing is exactly speech put to paper. This is why letter to close friends are the easiest to write: they clearly serve as substitutes for conversations. As long as the writer can imagine the other side's reaction to what is being written, the writing flows. Then there is a growing need for a live response, and then the writer stops and sends a letter and waits for a reply in order to be able to continue. Each letter in a series of letters then has to start afresh with some sort of a summary, a repetition, for short. Indeed, letter writers have no fear of repetition, and they do not need to vary their expressions but, on the contrary, they may stick to them for the sake of clarity.

The rule against repetition is doubly wrong. It is meant to prevent boredom, yet it does not. Information theory tells us that no text free of repetition is possible, both since such a text is hard to place in context and since the smallest misprint in it will alter it radically. To avoid boredom writing should hit its target, but writing in school has none; coaches, who are often bores, suggest that a boring task can be less boring by such devices as verbal

variations. These only detract from clarity.

4. There are many ways to write a scientific study.

There are many ways to write a scientific essay, and it is important to select the one that is found most suitable or comfortable. There are a few alternative ways for intellectual writing, and they all follow simple traditional formulae. This applies to all academic writing -- of a semester paper, a dissertation, an essay, a monograph, an encyclopedia item, even a scholarly letter. (Specific items that are very highly standardized will be ignored here, such as curriculum vitae and applications for bursaries or grants.) Office circulars are between personal letters and publications. They are the best models.

There is a trouble here, and a very deep seated one, that cannot be studied here: most graduate students who are stuck want no help in getting unstuck, and they wish to get unstuck their own way, not in any of the ways described below. The aim of this essay is to show that ordinary students, beginners and researchers alike, need not get stuck with their writings and agonize about them. To that end the technique of writing is discussed in sufficient detail for anyone who is stuck to try and get unstuck -- perhaps with the aid of some coaches or peers. Yet for many this is unacceptable. For one thing, Romanticism requires to go it alone. For another, the idea that everyone knows how to write forces people who are stuck in writing to blame other things for one's failure other than the lack of skill. The normal candidates are ill-luck and personal fault. As to ill luck, we all have it with no exception (as there is no perfection), and though of course some of us are very lucky and others are very unlucky, most cases under examination are not particularly of ill luck. As to blaming oneself, both tradition and Romanticism recommend this very strongly: Romanticism makes one loathe oneself for not being a Mozart or a Russell and tradition makes one blame oneself for laziness and ignorance. The bottom line is that all too many

Dissertation without tears, p.20

candidates for doctorate fail to write their dissertation just because they deem success as proof of self-worth. Here the mainstream feminist movement is just right: we must develop a sense of self-worth that requires no test and no evidence to support it.

To see the inanity of this common malady, consider a successful execution of the idea there rejected. Consider the success of one initially inundated with the self-rejection of a doctoral candidate and craving the evidence for self-worth attained through the submission of a dazzling dissertation. Two things should be observed about them. The first thing that should be observed about them is that they invite trouble. The second is that their authors are exhausted and seldom do any more research.

Consider excellence first. Excellent dissertations are usually works of perfectionists. After years of hard labor they are submitted -- by friends and relations, at times even by supervisors -- only to be rejected or returned for further correction and additions. Admittedly some excellent dissertations are rejected even if written not by budding pedants: they are rejected because they are excellent.

Excellent dissertations are more likely to be rejected than the run-of-the-mill not due to their excellence: to repeat, excellence is very fortunately often tolerated in the commonwealth of learning. It is that few academics have the courage to commend excellence, to decide that though most of the unusual works are average or below, often even well below average, this one is really excellent. In particular, the Romantics are right on one point: the excellent may very well be in discord with received opinion, and by definition most instructors share received opinions. Their backing of it is neither here nor there, the trouble lies in their submission to it, in accord with the Romantic view of Polanyi and Kuhn: the candidate is too young to be a leader and only innovations of leaders may be approved. Polanyi himself wrote an excellent dissertation, in which he proposed a new and

revolutionary idea (on catalysis) that was reinvented and established decades later. He did not complain and said it was sheer luck that he had a generous supervisor who tolerated his deviation.

The excellent tempt their examiners to employ high standards. Excellent contributions to the learned press, too, are often judged by unusually high standards. Though the style of learned papers is mostly atrocious, well written papers with important messages in them are treated harshly by referees, who are naturally drawn to reading them carefully and angrily, and then they notice every lapse. This makes sense: most learned papers are not read and are at most examined for reference or for an odd item, so that there is little need to improve their style; excellent papers, however, are likely to be read and so are better well written. Their authors often complain, and understandably so, since their presentations are above average. They swallow their pride and rewrite in order to get published. The case of doctoral candidates is different. They need their degree, often urgently; rewriting takes years and gives no assurance. So better not polish. Even a scientific paper is better not polished till after acceptance. Polish it last, preferably in the light of comments of intelligent referees (or even of typical ones).

The matter of continuation is more serious: a doctorate is literally license to teach; today it is a key to teaching and/or research positions. Not surprisingly, after having invested much in a doctoral dissertation, one wants a break, and then one has a strong distaste towards getting back to the grind. For this one needs a framework and a strong incentive, and one needs more than one's doctorate to get into a framework. The more lax the demands on tenured professors, the harder it is to enter the academy. After the Manhattan project the academy has tended to swallow all institutions of higher learning and research except for industrial research, which, if anything, is threatening to swallow the academy. So the likelihood is

regularly diminishing that a position that offers incentives for further research and writing awaits the perfectionists who have successfully submitted a serious, well-polished dissertation. They then tend to blame the system, and the system usually rejects all blame, in this case with some measure of justice.

The conclusion from this is simple and very common sense: get your degrees as soon as you can and then do as you please and/or as you think fit. If you must play by the system's rules, it is better to do so at the smallest price and stay as independent as possible. Everyone denies that there is an age limit on getting a Ph. D., and in some countries there are great incentives to delay doing so. In the English-speaking world this is not so: early graduation is a sign of genius and delayed one is a sign of weakness. Of course, signs mislead and one should judge things not by signs but by intrinsic merit. But those who do not trust their judgments go by signs. Academics do not trust their judgments, at least not more than others.

So let us agree for now that the quicker and smoother, the better. This means taking the tried way, but doing a worthwhile job. This is the intelligent employment of a given formula for a given technique. Let us then quickly glance at extant diverse formulas or techniques. Their diversity is not merely a matter of difference in skills or strategies: it reflects some deep-seated disagreements about learning. The most radical difference is between studying topics and studying questions. Topics are represented in dictionaries and in encyclopedias, in textbooks and in handbooks. Questions are best presented in Plato's dialogues, especially the early, short ones. When perfectionist students realize that, they try their hands in writing dialogues, hoping to outdo Plato. The absence of efforts of writers on topics to outdo Aristotle shows that they recognize Plato's excellence. A philosophical dispute lurks here: some expect true knowledge systematically

presented; others prefer discussions of questions representing a quest. (The word "skepticism" derives from the Greek for search.) Whatever the philosophy behind a technique is, however, it is the technique that is of concern here.

The extant, relatively simple formulae for writing, can prevent disaster though they may also prevent the writing of veritable masterpieces. This is true for every art or craft. Students who refuse to use the formulae may be confused or over ambitious; they may also be simply ignorant of the very existence of the formula. Thus, disciplines where a formula is taught are less prone to writing disasters. The most widespread formula is that of the inductive style. It is as old as modern science. It is highly objectionable, since it rests on the myth that science is inductive, which is false and harmful. Yet it admittedly does help novices a lot and prevents the problems that create or invite ambivalence and crises.

The inductive style was initially intended to serve authors of laboratory reports, initially amateurs with neither training nor aptitude for literary niceties. The chief success of this style is that it inhibits perfectionism; its users have scarcely problems with writings unless and until they meet situations in which the formula does not work, in which they need to explain their choice of experiment or its theoretical import, not to mention the need to argue against other views, particularly established ones.

The inductive style involves writing of scientific research reports and research essays, not doctoral dissertations. The formula for writing Essays is rather loose. It was invented by Michel Montaign in the sixteenth century. It was a variation on the sermon. A sermon is traditionally appended to an opening biblical text that it refers, or at least alludes to, the holiday when the sermon was delivered. It is a fantasy or a reverie on a theme suggested by the opening text, ending with reference to the beginning and with a moral as its coda. An essay is similar, though without the opening topical sacred

text, or with an opening that refers to a secular topical matter; its quotations are not only from Scriptures but also from the classics. Like the sermon, the essay is a fantasy or a reverie with a moral, but one much more general than that of a sermon, which was usually meant to arouse in the audience their sense of guilt.

The major innovation that has occurred to the essay soon after it was invented was the omission of the scholarly apparatus. When academics adopted the format of the essay for their own purposes, the scholarly apparatus returned, at times as learned footnotes or endnotes. (The poet T. S. Eliot caricatured this by adding notes to a poem of his.) In modern society the sermon looks increasingly like a non-academic essay, and one that has the advantage over both the sermon and the academic essay in that it need not be bombastic: it requires no scholarly and no pretense at novelty.

The scientific essay was invented by Sir Francis Bacon, and it was meant to include only unordered observations of facts, as he suggested that scientific theories are those that emerge inductively from facts untainted by theory. It was improved by Robert Boyle who made it the standard. A scientific essay, he said, describes observations of facts in a manner that makes it possible to repeat them. To that end a description of the apparatus used must be included and be sufficiently detailed to permit repetition of the experiment. If an essay includes a new observation, it should be published. At the end of the paper the author was permitted a brief addition of his own ideas. Controversy should be avoided whenever possible. The inductive style was popular since the rise of modern science; to the present day it is obligatory in many periodicals.

In the mean time the scientific textbook appeared. It was invented by Dr Joseph Priestley in the second half of the eighteenth century, for the purpose of teaching, and it comprises mainly abstracts from series of scientific papers on diverse topics. Of course it was also influenced by existing

Dissertation without tears, p.25

prestigious monographs, especially Euclid's Elements and Newton's Opticks. Encyclopedias and monographs, especially treatises, soon filled the literature, all greatly influenced by the inductive style. Handbooks appeared much later, and with them diverse sorts of specific literatures. There was thus a published formula for a scientific essay only, not for a book, much less for a dissertation.

The next innovation was the discovery of the critical style, one that presents every advancement as a step in a controversy. It was rather a rediscovery, of course, as it was used already by Plato, and so it was in a sense a step backward. Yet it was a novelty all the same, as it was applied to modern science. In a sense, then, it is the greatest innovation in the history of the scientific style.

5. The best and easiest writing formula is the dialectic.

The best and easiest formula is the dialectic: select a controversial question and discuss the pro and cons of the extant answers to it. R. G. Collingwood suggested that every research should consist in as the choice of a question, the finding of the extant alternative answers to it and the critical discussion concerning them. All this, he said, should be made prior to the possible presentation of a new answer. He did not suggest that this is the way to write up the results of one's research. In all of his prolific writings he never or almost never followed this formula in writing, though of course he did do so in his preparation for each of his books or essays.

The dialectic style solves many problems that beset beginner writers. It replaces the standard demand to state one's views and defend them. This demand is very stress generating, as the rules of defense are not known. Characteristically, professors demand it without knowing that philosophers debate the question, what are the rules of defense? The only reasonable answer to this question, and it does not enjoy consensus, is that a view is

defended by reference to criteria of what is a good answer if and when these are stated, and by refuting the best available criticism of it. How then do examiners grade students' success or failures in defending their views? Very badly. A fair deal should be made between the grader and the graded. In technical fields, where the right answer is uncontroversial and the arguments for it are canonic, there is little trouble. This does not apply to defending one's own view. Writing an essay is an unspecifiable task anyway. Students in the sciences do not write essays, yet their dissertations are essays, and they are stymied. In mathematics or in a mathematical study the problem may be avoided: if a new problem is solved in a dissertation and its import is described, however poorly, if a new theorem is presented and proven, however inexactly, then perhaps there is no trouble. Yet all too often the question arises, how new is new? What is novelty? Even in the empirical fields a claim that anything is new is asking for trouble, as supervisors and examiners may doubt it.

The simplest dialectical study is historical: there was a problem in the field and it was deemed important. It was solved first by one scholar, who was criticized by another, and then another solution was offered, and so on, and the field has progressed in the sense that the newer solutions avoid the criticism that was rightly directed against the older solutions. All this is a matter of history, and if the story is defective, the writer can describe and discuss the defects. All this is as straight as can be.

Of course, not always is the story as simple and straight forward, as it may involve, for example, criticism that is admittedly valid, but that is based on evidence, at times empirical evidence, that may be contested. At times the evidence is not contested but its relevance is; this is in principle easier, as relevance is a matter of logic, yet the examination of relevance requires making explicit some hidden assumptions. At times a question was deemed unimportant and then it was viewed as very important, and the researcher

may find too little discussion in the literature. An impressive example is the question, when do workers decide that the pay for work is so low that it is not worth their while to make the effort and go to work? This question was raised by John Maynard Keynes as a part of his research that was declared the Keynesian Revolution. He found no answer to it in the classical literature, so he ventured to offer one; the answer was not one he deemed true, but one he suggested the classical writers would offer had they thought about the question. Why Keynes deemed it important is a different matter that will not be discussed here. Suffice it to note that he did explain this point. Today his view is contested, as well as his reconstruction.

The dialectical style resolves the question, how involved should writers be in what they write? Clearly, they should explain the question and its import, and they should offer as many answers as they can, and they should offer the extant criticisms of the important answers in the field, and they can reassess them and/or supplement them. All this is very easy once a controversial question is found. It is amazing how hard it is for a beginner writer to find a controversial question. The fact is that they do have some -- everyone does, yet when they come to write about one they get stuck from the very start. This shows that they have some idea about what deserves a doctoral dissertation. This they should discuss with someone or they should go to the library and read a few recent abstracts and dissertations, so as to gain a sense of proportion. A good coach may suggest to write a few dialectical essays, to work on them some, and throw them away. You may then write quickly a full draft of a dissertation, with no hesitation, writing whatever comes to mind; when it is finished one should throw it away.

It is unreasonable to expect a fist drafts to be good, yet candidates are encouraged to spend inordinate amount of time working on them -- often just polishing them without any idea as to whether the effort is not wasted. Polishing a chapter before having written a full draft is like working on a part

Dissertation without tears, p.28

of a canvass without any idea as to what should come on the rest of it. It secures the total loss of one's sense of proportion.

Writers are blocked when they cannot throw away what they have written. The best cure for writing blocks, then, is to throw away written material every day. This sounds a waste. It sounds more wasteful to write five drafts than to write one or two. This is an error. It is like calculating without the use of paper, and putting on paper only the result of the calculation once it was checked and found correct. Writing drafts is the easy way of thinking, and those who suffer from writing blocks write on their brains and tax their memory, and all because they have the illusion that it is easier to change and improve before having committed the text to paper than after. The unsurprising empirical truth is the opposite, and the reason writers refuse to see it is their Romantic prejudices.

The argument is simple. Most people talk fluently rather than carefully: when beginning a sentence they consider neither grammar nor the end of it. Those who are more careful than fluent make stops between sentences. When most people write carefully, not fluently. This is so because we feel a poorly worded expression can be more easily erased than a poorly written one. We therefore need training not in writing but in erasing, and until we can write as fluently as we speak: without knowing the full sentence when we begin it. And then we should train in not erasing a sentence before finishing it, not throw away a draft of a letter or of an essay or of a dissertation before we have finished writing it. This is the quickest and most efficient way, as well as the most promising. In particular, when we write down our poor ideas and then we find out how poor they are we cannot deceive ourselves about our folly. This is terrific.

To conclude, here is a brief discussion of the dialectic method.

The starting point is the choice of a question. The simplest kind of question

is the task of selection of an item from a list by some given rule. In principle this is the task of selecting from a list of names those whose first or second or last letter is given. This kind of question is most specific and is best handled with the aid of computers. Computers help purchase an airline ticket, take stock, etc. These are sophisticated examples of selections.

Next come questions within a fixed intellectual framework, yet not given to computer treatment. Most everyday problems are of this kind. An intuitive feel is shared as to what answer to a given question is reasonable, what answer would be outlandish or no answer at all. Yet at times uncontroversial questions become controversial, unsolved, and have no known reasonable solution. This most important point is regularly ignored by a standard and very widespread confusion of the word "solution" with the much more stringent "true solution". This is true even of uncontroversial questions. Usually, the sophisticated undergraduates are just as unsophisticated and dogmatic as anyone else when asked to consider the question, "what day of the week is today?" and to decide how many answers this question may have. They say with no hesitation, "one". The right answer is "seven": only one answer is true, but seven are possible. If the question becomes controversial, then the seven become possibly true.

Some answers to controversial questions are uncontroversial. This sounds odd, since when an answer is generally endorsed, the question it answers is uncontroversial. But this is not the case when an answer is generally rejected. Suppose that we controvert the question, "what day of the week is today?" Suppose further that we agree that today is a work-day. The question still has seven possible answers, but now only five of them are entertained.

In general, when deliberating on an open question the obviously false answers to it are immediately excluded. This characterizes common sense or everyday thinking. Everyday treatment of a question is characteristically its

ordinary setting; ordinary settings make some possible answers to a question obviously false. Very obvious controversial questions have answers that commonsense recommended their endorsement and now it recommends their rejection. The choice of such questions is excellent yet beginners shun them. Presenting the simplest answers to an obvious question and explaining the reasons for their rejection creates the best kind of intellectual frameworks for their most efficient and up-to-date examination.

Things also get exciting when we translate a question from one framework or system to another. We may ask, what minor and reasonable variation in the framework may revolutionize the list of possible answers to our question? This kind of question is an invitation and a challenge to inventors. Very often, when a system broadens, it pays to search for away to broaden questions accordingly. The more one gets stuck within a framework, the smaller one's problems tend to get. This is true even of one's habits of everyday conduct. One may like this fact and one may rebel against it. Socially, however, the more cumbersome it is to move away from a framework, the less one should expect to have a solution that breaks away from it to be viable.

Which frameworks, then, are possible within which to solve certain scientific and/or technological problems? Here we move to all sorts of fields of activity, from metaphysics to science fiction. We may begin with fixed sets of answers to choose from and end with the search for new presuppositions that alter these sets.

The guidelines for the logic of questions in general, and for the logic of practical questions in particular, then, must be these:

(1) There are reasonable and unreasonable disagreements, intelligent and unintelligent ones; reasonable or intelligent disagreements are possible

Dissertation without tears, p.31

when there are two or more reasonable or intelligent answers to a question.

(2) A reasonable answer is one that can be both criticized and defended to some extent.

(3) The difference between the reasonable and unreasonable depends on general presuppositions.

One last advice: never quarrel with your supervisor, as you have then hardly any chance to win. If your supervisor cannot supervise a dialectic dissertation, seek one who can and change supervisors. If your supervisor promises to tolerate your choice and then forgets the promise, it is important to defend oneself by having things clarified in a correspondence or with more than one supervisor. This is no guarantee for the avoidance of a clash and its disastrous outcome, but we should try to avoid unneeded friction, especially with those who are bound to win regardless of whether they or you are right.