

HOW TO BE TECHNOLOGICAL THOUGH THEOLOGICAL:  
AN ANSWER FOR “FABRICATED MAN”<sup>1</sup>

(In three parts: Intimidations, Incriminations, Salvations)

[Address at and published in the proceedings of the Institute for Theological Encounter with Science and Technology: Fabricated Man II: in vitro fertilization, 1-30. St. Louis: ITEST, 1975.  
Reprinted with permission from ITEST]

Part One. Intimidations

1. Basil’s Complaint

“Technologousin ou theologousin hoi anthroopoi,” lamented Bishop Basil of Caesarea.<sup>2</sup> His people, alas, were preferring technology to theology. That was a millennium and a half ago. The situation today is not flatteringly different. Now as then the popular priorities are technological rather than theological. Now as then theologians complain. One would think that, by now, theologians could take the hint. With such a long track record of inhospitality to theology, or at least of ambivalence, hasn’t technology made its point all too well? It does not suffer theology gladly.

Read almost any good current literature on technology and ask, Where in all this is there any provision for theology or even any room for it, let alone a need of it? There honestly seems to be no point in technology’s closed circle at which theology might enter without appearing to intrude, a superfluous imposition, a tour de force. Even the Hastings Institute nowadays is an institute only of “Society, Ethics and the Life Sciences,” the closest thing there to theology, apparently, being “ethics.”<sup>3</sup> That is just it. About all that theologians still do for technology is to offer moral guidance, some closely reasoned warning here (for instance, against cloning) and some closely reasoned legitimations there (for instance, of population control), backed up occasionally by appeals to deity. But theology in any more classical, revolutionary sense? A theology in which technologists might find hope of actually superseding themselves? A theology to supplant this old world with a new one? A theology with something so transforming, say, as starting with a whole clean slate, as death and resurrection, annihilation and re-

<sup>1</sup> The term “fabricated man” comes of course from the book with that title written by Paul Ramsey (New Haven: Yale University Press, 1970).

<sup>2</sup> Epistle 90, J.-P. Migne (editor) *Patrologiae Patrum Graecorum*, Paris: Apud Garnier Fratres (1886), vol. 32, 473B. Quoted (though the reference there is not quite accurate) in Werner Elert, *Der christliche Glaube*, (fifth, revised edition), Hamburg: Furche-Verlag (1960), p. 543.

<sup>3</sup> “Most of the attention to date (that is, at the Hastings Institute) has been given to ‘bioethics’ and not theology or interpretation.” Martin E. Marty and Dean G. Peerman (editors), *New Theology No. 10*, New York: Macmillan (1973), p. xiv. But this state of affairs, Marty and Peerman go on to explain, is somewhat extenuated by the circumstances. “The reason for that is simple to see: the changes are so urgent that one cannot wait for the perspective of the years and limitless research. One must act. But this action is its own kind of interpretation; and this ethics, whether or not it mentions God, is its own kind of theology.” (Ibid.)

creation? Not really. Or not usually.<sup>4</sup> For such a theology technology has little need. Rather it does have need not to have such theology.

I believe, as this essay will argue, that that negative fact needs to be acknowledged. More than that, having been acknowledged the fact also needs explaining. What is it about technology – or at least about technological people, Basil’s hoi anthroopoi – that resists theology? Conversely, what is it about theology – including (perhaps especially) good theology – which makes technologists spurn it?

Not that they spurn theologians. As a matter of fact we theologians nowadays tend to be highly technological ourselves, and not only as consumers but as makers. Witness our own bureaucratic divisions of labor, our problem-solving logics, our sophisticated communication technics. But there seems to be one way more than any other that we have sold out to the technological establishment. We have reduced theology itself to little more than ethics, which in the end may not be all that different from technology. For both of them, ethics as well as technology, are stuck with man-as-he-is as the subject to be improved. To be sure, improve him they do, no doubt with divine assistance and with divinity-like models to lure him on. But there is little expectation – even less in some ethics than in some technologies – of man’s outright replacement, a radical substitution. Moreover, in both technology and ethics, including theological ethics, man remains the one who asks the questions (What wouldst Thou have me do?) rather than the one who is being placed into question (“What have you done?”). We theologians have grown reactionary with technology, rather than radicalize it as theology is meant to do. As technological anthroopoi we too resist theology, our own as well.

The question is, Why? One answer (the one in this essay) is the following. Technologists – and who nowadays isn’t one, more or less? – are intimidated by their mounting responsibilities. Hence they avoid, understandably, that One whom they are responsible to – response to God being what theology basically is. Having taken more and more control, as they must, technological people must also take responsibility for that control, which includes taking the consequences. Yet is that really possible for them to do? But if not, how are they to face the music? The temptation is simply not to do so.

Suppose, for instance, that a geneticist attempts to help an otherwise infertile couple by means of in vitro fertilization – attempts and then, as it turns out six months later, fails. He may want to respond to his failure by announcing generously, “I’ll take responsibility for that.” But can he really do that, if taking responsibility entails his taking the consequences as well? For isn’t it the fertilized embryo, now dead or deformed, which has already taken the consequences in fact – not to mention the let down parents, the

---

<sup>4</sup> There are notable recent exceptions. Donald Keefe, S.J., “Biblical Symbolism and Morality of *In Vitro* Fertilization,” Robert Brungs, S.J. (editor), Proceedings of ITEST Conference on “Fabricated Man: In Vitro Fertilization.” October, 1974, Saint Louis: Institute for Theological Encounter with Science and Technology (1975), pp. 41-60; notice especially Keefe’s section on “inseparability from worship,” pp. 48-49. Wolfhart Pannenberg, “The Doctrine of the Spirit and the Task of a Theology of Nature,” Marty and Peerman (editors), op.cit., pp. 17-37. Langdon Gilkey, “Religion and the Technological Future,” Criterion, XIII, 3 (Spring 1974), pp. 9-14; here Gilkey works at the theological implications of the sort of future described in Robert Heilbroner’s An Inquiry Into the Human Prospect.

incensed public, the brunt-bearing community of genetic researchers? There is no way that this geneticist, even with the best will in the world, may now transfer those consequences from the hapless embryo to himself instead, even though he were to volunteer to be defrocked or deformed or executed. It isn't only that he cannot bear to take the consequences but also that he cannot take them, since they are already being taken by others than himself, though his action was not their doing.

Nor is it simply that the geneticist did wrong. Who doesn't? In fact it may be that, under the circumstances, he would have been as wrong not to attempt the fertilization. In any case, the issue is no longer only an ethical one. His predicament now, once the wrong has been done, is that he is in no position realistically to bear the consequences which his own action incurred. Under such circumstances for him to offer to "take responsibility" is to offer to do what simply cannot be done. So his responsibility goes unmet. His debt mounts. Isn't that intimidating?

On the other hand, the geneticist's critics are probably no better off. They may be just as disabled as he is from bearing the consequences of their own action – their action, that is, in having criticized him. For instance, in having objected to in vitro fertilization they may have contended that any offspring conceived in such less than fully human ways would itself be less than fully human, that for it to be produced non-sexually would render it a "fabricated man". Assume for a moment that such an objection just might have had some merit before the fertilization was ever begun, as a deterrent to such a risky, still future venture. At that point it might still have been relatively harmless to call the hypothetical offspring less than human, seeing it did not yet exist. Yet now that it has existed and has been invested with massive parental affection and hope, and has since died, the implication of the critics' argument seems to be that what died must therefore not have been all that human anyway. But try telling that to the mother, who in one such case vented her bereavement as follows.

I can't see why some people believe a baby conceived in this fashion isn't as sacred as a baby conceived in the normal fashion. There's even more care, more desire, more intent involved here – because so much time, energy, skill and emotion had to be invested in its conception.<sup>5</sup>

(The mother's argument is not to be equated with Joseph Fletcher's, which I find much less defensible.)<sup>6</sup>

The question is, will these critics of in vitro fertilization now take the consequence? Will they themselves bear the devaluation, the slur of sub-humanness, which they inflicted on that offspring and which its mother, in her outrage, now does have to bear? No, they will

---

<sup>5</sup> Quoted from Mrs. Doris Del Zio's response to Dr. Raymond Vande Wiele, who allegedly interfered with an attempted embryo implant by the Del Zios' physician, Dr. Landrum Shettles, reported by David Rorvik, "Ethical Controversy of Implanting Embryo," Saint Louis Post-Dispatch, October 8, 1974, p. 3-D.

<sup>6</sup> A really considerable and (to me) persuasive evaluation of Fletcher's position appears in Richard A. McCormick, S.J., "Genetic Medicine: Notes on the Moral Literature," Marty and Peerman (editors), op.cit., pp. 55-84.

not bear that consequence, if only because she does and they cannot. And yet the offense was every bit as much their doing as hers. Again, the point is not whether they were wrong. I think it is clear that they were. But if that were the extent of the problem, any good ethicist could point that out for them and help them to do better next time. The fact is, the wrong has been done and, what is worse, there simply is no longer any way they can bear the hurt for which they however were responsible. For that problem of theirs no amount of ethical advice or even ethical improvement will help. Isn't that intimidating?

Add to that that these same critics of in vitro fertilization may be responsible also for other damaging consequences which they are likewise in no position to undergo themselves, although other folks (like children yet unborn) may have to do so because of them. (By the way, I can afford to be harder on these critics than on the geneticist only because I myself am closer to their sympathies than to his, hence closer to their predicament.) By their – our – public opposition to in vitro fertilization we may well have contributed, though unintentionally, to the current public outcry against fetal research generally. That public reaction has now hardened into law with last year's National Research Act, postponing any further experiments on living fetuses, and with at least fifteen similar pieces of state legislation. Such fetal research has now been barred “despite the knowledge that the testing of new vaccines or potential therapies for genetic diseases which might prevent congenital abnormalities or fetal death require such study.”

Who suffers the consequences?

If we do not do research on unwanted fetuses, we will do it on wanted fetuses, and indeed on children. Every new utilization of a drug, operative procedure, vaccine, or antibiotic on a human patient is an experiment and involves an act of faith....The first person on whom any new procedure I used is therefore an experimental animal, and often subject to fatality. Since we did not test the thalidomides on unwanted fetuses, we tested them unwittingly on wanted ones.<sup>7</sup>

If we who have criticized in vitro fertilization have had any slightest thing to do with depriving future congenitally deformed or diseased infants of that research which might have spared them, we share responsibility. But how hollow that will sound when it is they, not we, who have to bear the consequences. Nor can we bear those consequences no matter how ethically sensitive we shall have become. Isn't that intimidating?

I have still said nothing about another, quite different consequence for which we critics also may have been responsible, but a consequence which we are equally helpless to spare others from bearing in our stead. It is galling for us, I know, to be asked why, if we really valued child-life so highly, we haven't devoted nearly as much time and energy and funds to those already born, to helping single mothers, women in need of child-care facilities, providing assistance for families with hungry children. My point, once more, is not to reproach us with our moral inconsistency. We are all ethical enough to see that for

---

<sup>7</sup> Willard Gaylin and Marc Lappe, “Fetal Politics: The debate on experimenting with the unborn,” The Atlantic, CCSSSV, 5(May 1975), p. 71.

ourselves. My concern is rather with the loss of credibility we now suffer as a consequence of our inconsistency.

Ah, you may reply, but that is one consequence at least which we do suffer in our own person: it is we whom pro-abortionists and eugenicists and feminists take it out on. No doubt. On the other hand, if there really are people who should be reached by our strictures and cautions against *in vitro* fertilization, they are now beyond our reach to the extent that we have forfeited any convincing access to them. It is they who are deprived of whatever persuasiveness we might still have had. It is their loss too, not just ours, though we have helped inflict it on them by means of our unbelievably. What good does it do for us to say, we will take that responsibility, when the very consequences are already way beyond our taking? Isn't that intimidating?

No doubt most technological people suspect as much and so, in advance, play down the meaning of responsibility to bearable proportions. Their excuse may be, "Now let's be practical" or "Life needs to be gotten on with" or "Who can afford to worry about such things"? Exactly. Who can afford such truthfulness as that and still survive as a technological person, at least in his present form of existence? But that isn't simply a question of ethics anymore. Really, the question isn't so much "impractical" as it is intimidating. So what has to give way, in order to get on with living (or a sort of living), is a basic human truthfulness, responsibility – or what we shall shortly be calling "theology."

The result, conveniently, is that that One is excluded from technologists' lives who does hold them responsible for the full consequences. But if being responsive to that One is what theology is, then it is not hard to see why technologists are allergic to theology. Theology in that sense is not just superfluous to technology. It is a threat, the intimidating reminder of an account irretrievably overdrawn. Meanwhile, though, the theologian continues to be in demand by technologists for other, more ingratiating services: to warn them away from risky ventures and to legitimate their safe ones, should God ever challenge them. But any theology which suggest that He surely and already does, all ethical legitimations unavailing, is not apt to be overly indulged. Technology has reason to be anti-theological.

On the other hand, it will not do either to be anti-technological. That alternative is equally irresponsible. It denies human beings that magnificent stewardship of their environment and of one another which most makes them human. So what if, as they work at that stewardship, they also expose what little right they have to it and how mortally it inculcates them. Is the truth to be shirked just because it hurts? After all, there is a "technological imperative" which comes on rather high recommendation and is not really optional, the anti-technologists of our age to the contrary notwithstanding. Even such otherwise persuasive spokesmen as the humanist Fromm or the Christian Ellul will get no support from essays like this one, any more than that fact will deter them. Even if it were true that large numbers of people are disappointed with technology – that "the infatuation with technology that blossomed in the nineteenth century and flourished in the early twentieth is surely in a period of decline" – only the most *schadenfroh*

theologian would take joy from that.<sup>8</sup> One needs scarcely be American to celebrate technology. Even without the Boorstins and Schlesingers to tout this particular country's technical exploits – and how ambiguous they are! – Sir Peter Medawar comes close enough to truth in general when he says, “What is human about man in his technology.”<sup>9</sup>

But then all the more reason to lament a technology, which is not amenable to theology. Basil's complaint still applies.

## 2. Theological Means Responsible

Oh, I know it is possible logically, by redefining our terms. To minimize the opposition between technology and theology – that is, as conceptual abstractions. That way, at least in imagination, relations between the two might appear downright congenial. This paper will be doing some of that redefining, too, quite deliberately.

However, such redefinition of terms is meant not to deny what is but only to suggest what might be, a new and promising alternative. Nevertheless, even such well-meaning tampering with terms, though it be for a charitable cause, requires extreme care and a measure of hard-headedness. For words, even such elusive words as “technology” and “theology”, cannot mean just any old thing. They do have a history. They are not a wax nose. They have in fact meant this and not that. Granted. Even so, I am venturing that it is still possible to re-understand theology and technology in a way that honors both historic reality and future promise. But then, come to think of it, also that promising future needs to have some controlling basis in fact. It too needs to be more than merely imaginable if there is any reason to expect its promise to happen.

By promise I mean a new cooperation, new and improved relations between technology and theology. But then how to redefine the two terms with that promise in view? Answer: by identifying some common feature which characterizes them both. Yet given the history of their poor relations, what of any significance is left that technology could still have in common with theology and that could any longer serve as bridge between them? Answer: the common factor of responsibility. Indeed it is that same feature in common, responsibility, which explains also their falling out. Remember, we are pledged to account for both, their alienation and their hoped-for reconciliation. Responsibility, I suggest, offers that double clue. Other writers have sought the link between technology and theology elsewhere: in their mutual interest in humanum or their cooperation in Creation or their respective uses of “transcendence”.<sup>10</sup> Each approach has advanced our understanding. Would that as much might result from the present proposal: namely, that the telltale category joining technology to theology and explaining their disunion as well as their reunion is the category, responsibility.

<sup>8</sup> Ibid., p. 66.

<sup>9</sup> The title and theme of an article by Medawar in Smithsonian, IV, 2 (May 1973), pp. 22-28.

<sup>10</sup> See, for instance, Robert A. Brungs, S.J., “Reconciliation: Man-the-Maker and Man-the-Made,” Theology Digest, Vol. 22, No. 4 (Winter, 1974), pp. 324-332; Pierre Teilhard de Chardin, (tr. By Norman Denny) The Future of Man, New York: Harper & Row (1964); Langdon Gilkey, Naming the Whirlwind: The Renewal of God-Language, New York : Bobbs-Merrill (1969); Robert T. Osborn, “A Christian View of Creation for a Scientific Age,” Marty and Peerman (editors), op.cit., pp. 3-16.

For what else is technology – and here is the definition – except man’s assuming control of his world?<sup>11</sup> The definition seems obvious enough – that is, until we recall that whoever accepts control also accepts responsibility for what he controls. There is that word, responsibility. The suggestion is, responsibility is not really separable from technological control however much technologists may wish it were. Still, to speak of control and responsibility as belonging together is hardly arbitrary. That is affirmed by the most ordinary language. So that, too, is obvious.

Furthermore, as we said before, to take responsibility is to take the consequences. But who could deny that either, words meaning what they do? Still, the point bears repeating, to safeguard against cheap heroism. For if I take responsibility for my deeds, I do more merely than stand up and be counted as the deeds’ doer. I also inherit those deeds’ results. Not only do I admit to being in control, also I admit what my control has wrought. I am in charge, yes. But for that reason it is to me, to my account, that the consequences also are charged. They are “what I have coming to me.” Of course, this recompense may take the form of reward as well as penalty. But if one, then also the other. Retribution is not preferential. Responsibility means acknowledging what all I am liable for, especially as the result of my taking control.

See how the argument skips lightly along so long as we are only defining terms. But add the burden of historic fact, and suddenly the progression becomes almost unbearable. It is easy enough to say in general: the greater the technological control, the heavier the responsibility. But then add the specific time-space fact that never before in history have people controlled so much of their world as we do today. Suddenly, with that reminder, our responsibility looms as nothing less than crushing. Suddenly it is more by far than we can either discharge or even perceive. Suddenly the linking we just did of “control” with “responsibility” and of “responsibility” with “consequences” – that apparently innocent appeal to the ordinary meaning of words – now looks in retrospect like a sneaky trick to trap us in our own words. And now, the scheme exposed, we want to take it all

---

<sup>11</sup> “Etymologically ‘technology’ should mean the systematic treatment of any thing or any subject. In English it is a modern (seventeenth-century) artificial formation invented to designate systematic discourse about the (useful) arts. Not until the nineteenth century did the term acquire a scientific content and come ultimately to be regarded as almost synonymous with ‘applied science’ . . . . The editors have treated it as covering the field of how things are commonly done or made, extending it somewhat to describe what things are done or made.” Charles Singer, E.J. Holmyard and A.R. Hall (editors), A History of Technology, four volumes, London: Oxford University Press (1954), vol. 1, p. vii. That particular element of technology which I am here accentuating, the element of responsible control, looms more prominently in the two following definitions. “In its simplest terms, technology is man’s efforts to cope with his physical environment – both that provided by nature and that created by man’s own technological deeds, such as cities – and his attempts to subdue or control that environment by means of his imagination and ingenuity in the use of available resources,” Melvin Kranzberg and Carroll W. Pursell, Jr. (editors), Technology in Western Civilization, two volumes, London: Oxford University Press (1967), vol. I, pp. 4-5. “These then are the basic theological motifs which lie behind and make possible the appearance of technology: man, placed in a natural world that is at his disposal, sensing the value of human work and charged with the responsibility of using the material universe to fashion artifices that will accomplish human purposes,” Harvey Cox, “The Christian In a World of Technology,” Ian G. Barbour (editor), Science and Religion, New York: Harper & Row (1968), p. 266.

back and exclaim, Not that responsible! Control, sure, but not at the price of such deadly consequences! As if it had never been part of the agreement between stewards and House-holder to match their control with their responsibility. And maybe it never was. Maybe there never was any agreement at all. Maybe the stewards weren't even so much as consulted. Still, agreement or not, that is the arrangement in which they find themselves. Their own ordinary language, which is probably their greatest single technological achievement, rises up to indict them.

No wonder that the One to whom we are so hopelessly accountable, that same One who is the subject of theology, should need to be evaded. With unmet and unmeetable debts, who craves the Creditor? Even Sartre, after his hard-won atheism, could still appreciate this truth: it is like riding in a train with the conductor approaching, but with no ticket to show him.<sup>12</sup> Who cannot sympathize? How altogether reasonable it is that that one area of our common existence where we have taken most responsibility, because there we have taken most control – namely, our technology – is the same area where we are least open to being audited. Mightn't it have been more prudent to heed the sour-grapes anti-technologists: namely, that one ought not dance if one cannot pay the piper? But on the other hand, once the piper pipes, who can desist from dancing? Can the technological imperative really be disregarded by anyone who is at all human? But then the only way-out seems to be to default on the piper.

So much for a definition of technology: accepting control and, with it, responsibility. How about theology? Presumably it too has something to do with responsibility. Correction: theology is responsibility.<sup>13</sup> That is always how theology begins and always how it ends: in direct response, answering to God. Whatever else it may be in between – describing divine-human relations in the third person, speaking about deity as if from the sidelines – theology always proceeds from and always re-submits to, this primordial encounter with that One who holds us answerable to himself directly. As logos tou theou theology is, literally, God-talk. But before it is talk about God, it is first of all talk to God. And sooner or later, and over and over, that is what it returns to. Theology may be a confession before the world, but even then it is simultaneously confession coram Deo, I-Thou, vis-à-vis, prosoopon pros prosoopon – or as nearly as we can approach to that in present circumstance, remembering how impossible we find our ultimate responsibility to face up to.

So theology by this definition, namely as ultimate responsibility, is not just one other department of human endeavor alongside technology – the way art may be, for example, or love-making or dying. Theology rather is that dimension of Godward responsibility in all of these, technology included. How that dimension of life happens to be visualized – the uplifted gaze, the inward reflection, the backward glance, the peering ahead - is not

---

<sup>12</sup> Jean-Paul Sartre (tr. By Bernard Frechtman), The Words, Greenwich, Conn.: Fawcett (1964), p. 159.

<sup>13</sup> Dietrich Bonhoeffer (ed. By Eberhard Bethge and tr. By N. H. Smith), Ethics, New York: Macmillan (1955), pp. 194-230. Werner Elert (tr. By Carl J. Schindler), The Christian Ethos, Philadelphia: Fortress (1957), pp. 23ff, 46ff. and passim. Friedrich Gogarren (tr. By N. H. Smith), Demythologizing and History, London: SCM Press (1955), pp. 26-33, 49-54 and passim. H. Richard Niebuhr, The Responsible Self, New York: Harper and Row (1963), pp. 47-68



the decisive point. What is, is the One to whom the response is directed, who from whatever vantage demands an accounting in every sector of experience and for every sector – for the technological at least as much as for the “religious”. There are not technological responsibilities and then also theological responsibilities. Technology does have responsibilities, as we said. But that is precisely what is theological about technology, its responsibility, always to that One to whom all accounts are due. Technological responsibility means, finally, the coram Deo factor in technology.

Consequently, for technologists to neglect theology is not like neglecting some outsider. It is not like neglecting one’s correspondence. Theology is not that external to technology – some faraway pen-pal. Technology which is really anti-theological – that is, in the deepest sense irresponsible – is bereft internally, like someone who fears even to acknowledge there is any mail to be answered. He denies there is anyone to reply to. Sooner or later, as his mail keeps coming he will have to deny that it is for him at all. He must refuse to accept it, to the point finally where he will have to disbelieve his own name and address.

And so with the anti-theological (that is, irresponsible) technologist. Sooner or later he must deny himself as well. By denying he is responsible he must fancy himself instead as a thing. But then who, really, is the “fabricated man”? Is it the pitiful creature – say, the “modified man,” the “para-human” – which this technologist qua eugenicist or neuro-engineer produces in his laboratory? Is that the “fabricated man”? I would wonder. Isn’t it rather this technologist himself? Isn’t he the original “fabricated man”? Where there is no God, as Berdyaev said, there is no man.<sup>14</sup> And the One who holds the technologist responsible though he denies it, holds him responsible for that consequence as well – namely, his self-dehumanization – by giving him his way.

The thing that reduces the technologist to a “fabricated man” is not just that he happens by some bizarre and unethical experiment to produce other, less than human “fabricated men”. On the contrary, he may for all the world be the most cautious, deeply ethical, downright pedestrian of technologists, given to almost no adventures at all – and still be, himself, a “fabricated man”. If so, what makes him that is that he sidesteps the theological factor in his technology, his ultimate responsibility – in other terms, God – and takes refuge instead in an intimidation-proof and hence thing-like existence all his own. What might it be that most immunizes him against the intimidations? Mightn’t it be the very legitimations he secures from ethics – which none of us can do without, anymore than we can do without technology, but which we also find to be such a seductive substitute for theology, for ultimate responsibility.

Finally technology itself suffers. We might amend the old formula with which the monk Caesar of Heisterbach explained the downfall of monasticism, and apply it to technology instead: responsibility enjoys technological control; but control, by its intimidating

---

<sup>14</sup> Nicolas Berdyaev (tr. By R. M. French), The Beginning and the End, New York: Harper (1957), pp. 229 ff.

consequences, discourages responsibility; responsibility in its fall pulls down technological control.<sup>15</sup>

However, didn't we speak also of a promising future? As we began this section, identifying the category of responsibility as the link between technology and theology, didn't we promise that that same responsibility could occasion their reconciliation? Wasn't the whole idea behind our redefining technology and theology around responsibility, not only that thereby we might explain their poor relations but also that a way might be found, as we said, for "new and improved relations"? Right.

But we also said, back there, that those new relations could not be produced simply by imagining them, by redefining terms arbitrarily to suit our own wishes. Hope, at least Christian hope, is not word-play. The future promise, every bit as much as the dreary plight we have rehearsed so far, requires a basis in historic fact. It too must have happened, at least by anticipation: an alternative history somewhere, sometime; some other, equally human, time-space intervention which replaces the technological irresponsibility of here and now.

Now if that alternative prospect sounds suspiciously christological – well, the audience will have to take responsibility for its own suspicions. But neither do I have any business disclaiming those suspicions. In any event, that other development – the promise which awaits technological responsibility – must wait for our treatment of it until Part Three, "Salvations". First comes an intervening Part Two. One cannot say everything at once.

## Part Two. Incriminations

### 3. Indefensible Defendants

Several times already we have used the word "responsible" interchangeably with "accountable" and "answerable". That figures, since responsum is Latin for "answer" and since our own language, at least as far back as medieval English, employs the two terms synonymously. But responses, answers, presuppose questions. Nothing, Reinhold Niebuhr used to say, is so out of place as an answer where there is not first a question.

In this case, the case of our technology, there is first a question. Technology is one mode of answering, perhaps poorly, most often unconsciously, yet as if driven and haunted by some implicit cosmic question. Not only technology, of course, but all of life is an effort, as we say, to "live up to" our responsibilities. Life is a lived-out response, in answer presumably to some prior asking. All history, technological history included, appears as an on-going struggle to satisfy a relentless process of questioning.

---

<sup>15</sup> Caesar of Heisterbach's original formulation reads: "Discipline begets abundance, and abundance, unless we take the utmost care, destroys discipline; discipline in its fall pulls down abundance," Roland Bainton, The Medieval Church, Princeton: Van Nostrand/An Anvil Original (1962), p. 13.

To say of people that they are answerable – for instance, for the control they exercise as technologists – suggests there is Someone questioning them, to whom their answers are a response. Who that Someone is we have already intimated. It is that same One to whom all responsibility is due, now reappearing in the more aggressive role of questioner. This questioning, in other words, does not originate with technologists themselves, though they may prefer to suppose it does. The rhetoric of technology is resplendent with words like “inquiry,” “exploration,” “testing,” “research,” all of them assuming the technologist as their source. What is overlooked is that simultaneously he himself is being inquired into, being searched and known.<sup>16</sup>

Indeed, the technologist’s own professional inquiries, whatever other good things they may be trying to prove, are always also trying to “prove himself.” As if he must. And he must. The research and testing he “pursues” are but a reflex of his own being put to the test, wills he or nills he, by a Pursuer he does not control. Though technology is seldom referred to anymore – as in older English – as a person’s “calling” or his “station” (German: Stand), it still functions nevertheless as his “stand” in another sense, a witness-stand, to which he is daily being “called” to testify. But then the One who is calling him to question is not himself but the Prosecutor.

Characterizing the process that way, as prosecution, puts a different light on the nature of the questioning. If what technologists are responding to is indeed interrogation, an inquest, then they are not being approached with mere requests for information, much less for advice – like What makes things work, or What shall we do next? Such questions, the technical and the ethical, are there too of course. But in, with and under them is another, more leading question, also more incriminating: What do you have to show for yourselves? Not only: What ought we to do? But prior to that: How are you doing? Give an account of yourselves. Show cause, if you can, why you should be entitled to the control you assume. The people’s very technology is in question. The implication is, their own right to continue as the earth’s stewards is questionable. Already the mere fact of their responsibility – that they are answerable at all, that they are so much as called to account – is a reflection upon them from the outset, even before they respond. The technologist is a defendant. The questions to him imply criticism. His Questioner is his antagonist.

Now I make no pretense that all this happens as obviously as the nose on one’s face. It is hardly demonstrable empirically, at least not any longer, now that the nature of what people “experience” is less and less informed by a common spiritual perception. On the other hand, neither does all this – this primal Prosecution to which technology responds – happen un-empirically, independently of the technologist’s facts and acts and artifacts. On the contrary, isn’t it those very down-to-earth consequences of his acts, his empirical

---

<sup>16</sup> There is no intention here of suggesting that technological research is being “searched and known” by God alone, as if there weren’t all sorts of human monitors to whom the technologist is likewise accountable. Of interest in this connection is the current movement to devise and institute agencies of “technology assessment,” “environmental impact statements,” etc. See Joseph F. Coates, “Technology Assessment,” Yearbook of Science and Technology, 1973, New York: McGraw-Hill (1974), pp. 65-74.

effects construed morally as retribution, which still bring his responsibility home to him with at least some glimmer of recognition? Even if the invisible Prosecutor himself is no longer a recognizable datum for today's technologists, their own cause-and-effect history by which the Prosecutor incriminates them still is such a datum. The incriminating evidence is ever so obvious to them, even though the fact that it is incriminating may not be obvious.

More than that, there is the technologists' ordinary language, which these pages have been exploiting for all it is worth. That common language – in our case, everyday English – still has technologists today speaking as though “control” implies “responsibility” and “response” imply a “questioner” and as though all this together implies some moral-spiritual universe conducted like inter-personal relations in commercial and courtroom transactions. Admitted, language is often anachronistic, a cultural laggard which still has us saying and imagining things we no longer perceive. Still, our language does seem to influence what we see and how we see it. And who can say definitively where language leaves off and experience begins, if indeed the two can be disengaged at all?

As we said, it may no longer be all that obvious that the historical evidence against us is as incriminating as it is. Still, whether the factor of incrimination is recognized or not, the evidence itself is plain enough. For that matter the evidence might still be suggestive enough to some technologists to recall something approaching incrimination. It is at least worth a try. So then, what is the evidence? There is a lot of it available. There is time for only one sample. I have in mind that general phenomenon from our common technological experience today, our experience of losing control. The implication is that this experience, our loss of control, is an empirical consequence by which the Prosecutor incriminates us as responsible to himself, evidence of our guilt, proof of our having forfeited our stewardship.

Had there been time, we might have cited other incriminating evidence as well. For example, our society's experience of affluence as something indebting. I mean, isn't it significant that our technological abundance comes to us, not as something for which we simply are thankful but as something for which we ought to be thankful, and therefore cannot be? Gratitude is perceived by us as a duty, a debt, which is contrary to its nature. Either thankfulness is spontaneous or not at all. It is not something to be extorted by moral injunctions. So thanklessness has become a conscious, national disability. The surrounding poverty – for example, world hunger – only aggravates our sense of debt, and so paralyzes gratitude.<sup>17</sup>

Or as another strain of incriminating evidence we might have considered the way we experience God-talk – namely, as an impossibility. Not that God-talk no longer flourishes among us. After all, we still come off as one of the most religious of modern technological societies. But for all the God-talk there is, it is (as Luckmann puts it)

---

<sup>17</sup> Friedrich Nietzsche is instructive on this point, if only negatively. See his book (tr. By Walter Kaufmann and R. J. Hollingdale) On the Genealogy of Morals, New York: Vintage Books (1969), pp. 62-63, 168-169.

extraordinarily “rhetorical”.<sup>18</sup> It seems constitutionally incapable of speaking to two major areas of our common life, politics and occupations, both of them dominant expressions of our technology. What is perhaps most haunting about this “practical atheism” is that it is by now involuntary, something which the society cannot help but carry out, as if meaningful theological discourse were no longer even available to us as a national possibility. – Or still another national phenomenon, equally incriminating, is our excessive preoccupation with our own guilt, not least our guilt about our technology. It is almost as though we were flagellants trying to punish ourselves before someone else does – as if to scoop the Prosecutor. (But that assumes that he would settle for something so cheap as national self-scorn.)

Instead of all these incriminating phenomena let us confine ourselves to the single example we mentioned first, our experience of losing control. Paradoxically, one result of our taking control as we have is “that we seem to lose control over our own system.”<sup>19</sup> The words are Erich Fromm’s but the phenomenon he describes is widely acknowledged. T. George Harris summed up the year 1973 by noting the same phenomenon, “especially among the groups most threatened by the pressures – the less educated workers of what sociologists call the lower middle class.” “In dozens of peculiar ways,” Harris writes, “people begin to feel nudged by their own artifacts and to lose control at a time when control is most needed.”<sup>20</sup>

This awareness of losing control is by no means limited to “the lower middle class”. In the short time since Harris recorded his observation, a whole nation of technologically minded people has come to much the same conclusion, and at very different places in the technological slippage. For example, petro-diplomacy. It is this country’s very advancement technologically and industrially which has rendered it vulnerably dependent upon oil. It has forfeited control to those nations, once its own colonies, which have virtually no industry and technology and but one natural product, oil. “Since oil has become the life blood of industrially and technologically advanced nations, control over the supply of oil implies control over the life of the oil-importing nations.” This new control in the hands of the exporters, if “applied with sophistication, can become an instrument of political power” – over us, that is.<sup>21</sup> We are witnessing the precedent of political power ceasing to need as its prerequisite industrial or technological or even military superiority. The controller has become the controlled. Isn’t that incriminating?

Or consider that singular feat of technological control which has been one of this country’s main claims to fame, scientific management. Less than a decade ago we were still willing to believe about ourselves, as we then had reason to, what Servan-Schreiber’s The American Challenge was saying about us: namely, that we were taking over Europe economically “not with dollars or oil or steel or even with modern machines” but “with

<sup>18</sup> Thomas Luckmann, The Invisible Religion, New York: Macmillan (1967), pp. 88-90.

<sup>19</sup> Eric Fromm, The Revolution of Hope: Toward a Humanized Technology, New York: Harper (1968), p. 1.

<sup>20</sup> “Era of Conscious Action,” 1973 Britannica Book of the Year, Chicago: Encyclopaedia Britannica, Inc. (1973), p. 14.

<sup>21</sup> Hans J. Morgenthau, “The New Diplomacy of Movement: A Caveat,” The University of Chicago Magazine, LXVII, 3 (Spring 1975), p. 10.

creative imagination and organizational talent” – especially organizational talent, “management skill”.<sup>22</sup> So convinced were we of Servan-Schreiber’s compliment – and so were the Europeans and Japanese who bought his book by the millions – that management education became one of our fastest growing exports. In due time, “because Europe is now ‘where the action is’ in management training, the prestigious Harvard Business School in 1972 established a center in Switzerland offering management training courses.” What the Europeans and Japanese have been learning is not unrelated, it seems, to their increasing investment in American business operations. And that is not just portfolio investment but investment rather which carries with it participation in American management – in other words, control.<sup>23</sup> If in face of this invasion certain American interests are now scurrying to new forms of protectionism, they only underscore by that how their once proud control is slipping. Add to that how, inside America, people are increasingly critical of managerial control, until even a super-technologist like Herman Kahn concedes that management will need to become more participatory – for “the future of the corporation”.<sup>24</sup> Control is not what it used to be. Isn’t that incriminating?

Or take, once more, the example, of in vitro fertilization. One of its most vigorous critics, Leon Kass, really has no objection to such fertilization by itself, intrinsically. But his objections are not for that reason any less real, prompted as they are by the attendant hazards of such interventions. One hazard especially is noteworthy for our present point about loss of control. Assume for the sake of the argument that in vitro fertilization could be made risk-free. That admittedly would mark an impressive advance in control. However, that advance would only open the door to some further advance, and that, to still another. What is objectionable about that? Just this: each successful control along the way would only seem to justify all the more the final step, the separating of procreation from sexuality, which is Kass’ major concern. “One technical advance makes possible the next...-not just technologically but also in moral arguments. At least one good humanitarian reason can be found to justify each step,” until the last and most dehumanizing step becomes inevitable. “Increasing control over the product is purchased by the increasing depersonalization of the process.”<sup>25</sup> We know from experience how control begets its opposite. Isn’t that incriminating?

The samples could go on. The more control, the less. So it seems. In one breath Robert Theobald can sound ever so optimistic about control (he is hearing the Piper): “Just as the development of economic abundance could allow us to increase the range of freedom, so too the rapidly increasing range of knowledge could be used to increase freedom. “But,” in the next breath, “there is a danger that it may actually have precisely the opposite result.”<sup>26</sup> Ah, the “result”, the incriminating consequence. How exorbitant is

<sup>22</sup> The American Challenge, New York: Atheneum (1968), p. xiii.

<sup>23</sup> Stefan Robock, “The Silent Invasion,” World, II, 2 (January 16, 1973), p. 29.

<sup>24</sup> Herman Kahn, The Future of the Corporation, New York: Mason and Lipscomb (1974), p. 205.

<sup>25</sup> Leon Kass, “Making Babies – the New Biology and the ‘Old’ Morality,” The Public Interest, (Winter, 1972), pp. 48-49.

<sup>26</sup> The Challenge of Abundance, Garden City, N.Y.: Doubleday (1962), p. 129.

the Piper's price! Charles West is right: technological man "is in a curiously divided state."<sup>27</sup>

It does seem that technological control is a case of more-begets-less. That may be. Just so we do not mean by that that it is the fact itself of our taking control which is being recompensed by our loss of it. It is reactionary, it seem to me – yet cowardly to pretend that our original mistake was our taking control at all. That strikes me as a bit of Promethean Weltschmerz.<sup>28</sup> For to assume control – say, of the market or of cancer is to assume responsibility – in these instances, responsibility for cancer victims and for the exchange of goods and services. To regret being responsible is to regret being human. Wouldn't it be more genuinely human to acknowledge that our original mistake is ourselves: not merely something we have or have not done but our being who we are at all? Fromm confuses the issue with his dark superlatives when he imagines that this loss of control is our technetronic society's "most ominous aspect." No, not the most ominous. Not if losing control is what we deserve. For then our loss of control is only right. It is what we have coming to us. Then what is still more "ominous" is the reason, the fault, for which we have deserved to lose control. But what is that? Mightn't it be we?

Fromm does construe our predicament as something for which we bear responsibility. That is, he presupposes a criminate process, though he does not in so many words acknowledge it. Actually he functions as that process' spokesman by verbalizing its criticism against us. But obviously, as he also must know, the criticism is not his invention. Prior to Fromm's verbalization of it there must be enough basis in pre-verbal fact to verbalize: the fact that we have lost control, the fact that we have ourselves to blame for that, the fact that things do happen retributively that way. Although we don't dare put words into Fromm's mouth, what he is articulating is creation's own critique of us. Creation is critical. History is evaluative. If we were looking for something "ominous," that would be ominous enough: not simply the fact that we are losing control but rather that that fact functions to incriminate us. Isn't it ominous aplenty that the world-scene on which we arrive, this good world, is already structured in advance to interrogate us and inculcate us? It is as though only one thing still remains to be done before our case is disposed of: we should first have every opportunity to be convicted, not arbitrarily or behind our backs, but by the palpable, historical testimony of our own lives – so as to be "without excuse".

Yet who can bear to accept that, except perhaps the morbid or the masochistic? If that were all, then theological truth really would be inimical to technological responsibility, encouraging only quietism and world-flight, enervating every ethical impulse, defeating the technological imperative. Still, mightn't there just be quite another breed of technologists, who do face their responsibility – Prosecutor and all – for the simple

---

<sup>27</sup> The Power To Be Human: Toward A Secular Theology, New York: Macmillan (1971), p. 28.

<sup>28</sup> Two helpful comparisons of the Promethean and Christian symbols as they bear upon our technological world are Gilkey, "Religion and the Technological Future," op.cit., pp. 13-14; William F. Lynch, S.J., Christ and Prometheus: A New Image of the Secular, Notre Dame, Indiana: University of Notre Dame Press (1970).

reason that they are free to, having been liberated by a new and surpassing alternative? What is that? The answer waits.

#### 4. The Words as the WORD

Whatever available experience today's technological people might still have – whether in their immediate perceptions or in the traditional residue of their language – we have exploited as far as we can. How meaningful such theological themes as retribution, divine interrogation, criminate process might yet be to our technological culture, we have tried guessing at by such tenuous devices as mass phenomena and the etymology of words. We have gone as far with that method as we can. Now it is time to admit that all along we have been following the lead of another Word. We have proceeded, as Augustine might have said, somewhat the way a schoolboy struggles to make sense of the arithmetic problems in the forepart of his book: namely, by having one eye cocked at the answers in the rear. That that is what I have been doing is hardly a secret to this audience. So we might as well make a clean breast of it and turn forthwith to the back of the book, to that other Word.

That this Word is special is itself a claim of faith. It is part of the Christians' venturesome confession. For this Word is no less human than any other words. Its words and connections come from that same great technological achievement of man as all languages do. But the human words in this case, so Christians dare to say to God, they have gotten also from God, calling him as witness to their claim. The biblical writers originally, accepted responsibility for believing God was responsible for this Word they spoke. But now, by affirming those original writers in that faith, today's believers likewise bear the same responsibility. Logically, they could be wrong, as they know. Many of them have reckoned with that possibility. Then what is it, in spite of all, that emboldens them to hold God to this Word as having given it himself? One thing above everything else: what it says. The Christian presupposition is, nothing so all-transforming could have come from anyone else.

Then what does this biblical Word, which is confessedly God's own, have to say about technological people like ourselves? This much at least: that we are all – no less in our technological lives than in the rest of life – constantly and inescapably under pressure to give an account of, to justify ourselves; and that this very circumstance of being forever compelled to come up with answers, which only incriminate us the more, is itself part of the divine judgment upon our fallenness.

According to that biblical Word, it is not yet enough to say of technological man that he has been assigned control of his world. True, he has. But that is only half the story. Granted, that too is part of the audacious faith-claim, that man has been divinely appointed for dominion over the earth. His is a preeminence, so we believe, which he may forego only at the expense of foregoing his humanity. But to stop there, with the assertion of man's stewardship, is to stop far short of the story's end. The Creation accounts, remember, include also an account of the steward's fall. And with his fall



comes...well, what? Comes the steward's two-weeks' notice, his walking papers, the notice of his dismissal. But first of all comes the "Lord God" with his devastating interrogation: "Adam, where are you?" (Gen. 3:9) You there,, hoi anthroopoi, why are you hiding? You technological people, what have you fabricated out of those ridiculous fig-leaves? Clearly the questions are loaded.

Comes back Adam's pusillanimous response, disclaiming responsibility for having been born naked. The Prosecution: "Who told you that you were naked?" The responses get worse; Adam shifts responsibility to the woman. Follow the verdict, to no one's surprise. The outcome was foregone, the consequences inevitable. In fact, the cross-examination itself was already part of the consequences, pressing the already guilty Adam, out of his own mouth, to convict himself. So it is in the technological world ever since. Comes the Lord God: "Cain, where is Abel your brother?" The technologist-farmer responds with a typically agnostic alibi: "I d not know; am I my brother's keeper?" "And the Lord said, 'What have you done?'" (Gen. 4:9,10) That is no neutral request for information. The very tone of the question implicates the defendant.

Again, comes the Lord God: "What is this that I hear about you? Turn in the account of your stewardship, for -(and this time the question already includes its own condemning verdict)-you can no longer be steward." (Lk. 16:2) The interrogations are recognizably the same with one technologist after the other: the farmer, the animal husbandman, the fisherman, the homemaker, the king, the hooker, the hunter. Come to think of it, who is it after all who is the real hunter and who the hunted? As one technologist-defendant protested, "What is man that Thou dost...visit him every morning, and test him every moment? How long wilt Thou not...let me alone,...Thou hunter of men?" (Job 7:17-20) Such attentiveness from this stalker of human beings is hardly a compliment to them – as technological people, by their evasion of him, seem to acknowledge.

But if evasion is not the answer, what is? Surely not the sort of bold retort to God which we have just quoted from Job? For isn't that bold to the point of insolence? How could that possibly be what we have been calling the response of faith? Isn't faith throughout affirmative, saying Yes to the Other? Talking to God? Fine. But talking back to God? How can that coexist with faith? It does sound dubious, doesn't it – what an old rabbinic saying claimed – that "chutzpah against God is good for the soul"? Or if it is good for the soul, surely it is not good for one's survival. Who could manage both, chutzpah and survival? Good question: who could? Who was this character, Job, anyway? What manner of technologist was he? How did he swing it?

It isn't easy, obviously. And obviously there is a type of phoney boldness which is the opposite of faith, the type which reverses the blame and shifts the fault back upon the Prosecutor: "Why does (God) still find fault? For who can resist his will?... Why have you (God) made me thus?" (Rom. 9:19,20) In other words don't blame me; you made me this way. Such backtalk really is not bold at all but a cop-out. It is the self-pitying excuse of those technologists who offer to exonerate us all as tragic heroes, as automata who are caught in circumstances beyond our control and (their bigger fallacy) beyond our

responsibility. To that offer of theirs to romanticize our guilt, our answer should be easy: No, thanks.

“Why did you make me thus?” The question, in the original, does not rate even a direct reply, only a rebuff: “Who are you, a man, to answer back to God?” And there is a hint here that anyone who does so answer back to God may not be “a man” at all. Not truly a human being but a throw-back rather, a regression to pre-Adam, mere molded clay. For a second form of the rebuff follows immediately, “Will what is molded (blame) its molder?” (v. 20) In other words, if what you prefer is to be irresponsible, merely a manufactured artifact, a thing, then be a thing. But then do not claim still to be in the position of “a man” with the prerogative of responding. If you insist on not being answerable, so be it. I shall hold you to that and shall prevent any further opportunity on your part to answer. But in that case do not complain about being only an interchangeable digit, a disposable pot, a “fabricated man”. Then do not begrudge your being controlled. If all you wish to be is clay, “has the potter no right over the clay...?” (v. 21)

Still, as we hinted, there is another kind of “chutzpah against God” which is not irresponsible but altogether faithful, and even manages survival, though that is not easy. There is a kind of Respondent – of whom Job, that “blameless and upright man who feared God,” may have been a poetic anticipation – who actually can bear to confront the Prosecution as the mortifying thing it is and can even put that mortification to good use, for lasting life. Who is that Respondent? It is time for our answer. The final segment of the essay, with its promise for a theologically responsible technology, is at last upon us.

### Part Three. Salvations

#### 5. “Here He Is – On This Gallows”

The theme-words in Parts One and Two are “intimidations” and “incriminations” and now, in this last part, “salvation” – but for a better reason merely than that this third word rhymes with the first two. What is the better reason? Is it religious? Perhaps, depending on what we mean by religious. Notice, the cautiousness of my answer. There was a time until recently when many of us used words like “salvation” and “saved” with great ambivalence. Theologians like Bonhoeffer and H. Richard Niebuhr had taught us to beware of a brand of religion among us which, by offering to “save” people from this world, seemed actually to inure them to their responsibility for the world’s care.<sup>29</sup> Consequently, if that is what “religious” means, then no, in that case my reason for choosing a word like “salvation” is not religious.

---

<sup>29</sup> Dietrich Bonhoeffer (tr. By Reginald Fuller), Letters and Papers from Prison, New York: Macmillan (1962); see, for instance, Bonhoeffer’s contrasting of Christianity with “religions of salvation” (passim). H. Richard Niebuhr, Christ and Culture, New York: Harper (1951), pp. 65ff.

More recently, however, rather than abandon such grand and robust salvation terminology to its abusers, theologians have sought to reinstate it in its originally Christian intent of saving not only “souls” but the world.<sup>30</sup> They are doing so, I am sure, fully prepared for the skeptical reactions – the arched eyebrows, the knowing smiles, the tongue in cheek – which any such ambitious claim is bound to elicit from a technological culture like ours which smugly knows all about visionaries and crackpots who are out to “save the world”. It is all the more important, therefore, to be clear about who it is who accomplishes the world’s saving, and how. That will be a major concern in this Part Three. I cannot guarantee, of course, that even this world-Saver will escape the charge of crackpot. At any rate, who this world-Saver is will insure that the “salvation” terminology in this context is at least theo-logical, whether or not it is also “religious”. For who he was and how he saves has a good deal to do with logos tou theou.

At that, even in view of who the Saver is, a certain healthy – I might say Christian – skepticism remains in order. For how widespread can such a world-saving, world-transforming Christian movement realistically hope to become? Martin Marty sees the other variety – that neo-evangelical American Protestantism which seeks instead to “rescue” people from the world – deeply entrenched, possibly growing.<sup>31</sup> So does sociologist of religion Richard Fenn. In fact, Fenn expects that in a technological society like ours it is precisely the world-transforming religions – he uses Bryan Wilson’s types, “revolutionary” or “conversionist” religions – which are dying out and the world-fleeing, “sectarian” religions which by contrast will “survive”. Fenn is convinced that an essential feature of technological society, its “differentiation” of religion on the one hand from work and administration on the other, “makes the political and economic sectors of society irrelevant to the pursuit of salvation.” For that reason “more introversionist and quietist types of sectarian religion are well adapted to survival...”<sup>32</sup>

There is that word again, “survival”. Can survival coexist, we asked earlier, with “chutzpah against God”? Now we seem to be asking quite a different question about survival: is there hope of survival for a movement to save the world? Really the two questions are the same. To save the world is itself a kind of “chutzpah against God.” To promise the world salvation in any really world-loving sense is an act of audacity, not only in face of eye-brow-raising technologists but in face of the divine Prosecution as well. To offer salvation, not just to disembodied, supra-terrestrial “souls” but to a world of concrete, irresponsible technological people (and peoples) and to their corrupted world itself is to incur massive, even fatal opposition. For remember what intimidating and incriminating judgment we saw being directed against just this technological world. To

---

<sup>30</sup> Even though it is the large-scale ecumenical organizations of our day, notably the World Council of Churches, which have done most to reinstate “salvation” as a viable theme for the Church’s whole ministry in the world, still the salvational language is conspicuously absent from the WCC’s recent “Science and Technology for Human Development: The Ambiguous Future and the Christian Hope,” Report of the 1974 World Conference in Bucharest, Romania, Anticipation, 19 (November 1974); see especially Part Six, “The Theological Understanding of Humanity and Nature in a Technological Era,” pp. 33-36.

<sup>31</sup> Marty E. Marty, Righteous Empire: The Protestant Experience in America, New York: Dial (1970), p. 263.

<sup>32</sup> Richard K. Fenn, “Toward a New Sociology of Religion,” Journal for the Scientific Study of Religion, XI, 1 (March 1972), p. 30.

fly in the teeth of such withering disapproval by intervening in that world's behalf is bound to raise the question, Can anyone who so intervenes, who risks such "chutzpah against God," expect to survive? Fenn, for larger reasons than he intended, had a point.

All things considered, it should not be at all surprising if the world-saving movement we are talking about should incur monumental survival problems, not least of all from that very world of technology which it aspires to save. It might even be that the technologists who will most resent having their world saved are those who are card-carrying, church-going, zealous adherents of Fenn's "sectarian religion" (millions of technologists are) and who most value that very "differentiation" of which he speaks between the religious sector and the technological. Marty, too, says that they

have usually been adopted by representatives of the approved world, supported by manufacturers and feted by presidents. Their language made them sound more discontented with the world as being beyond God's power – until he ushers in a new age with Christ's Second Coming. They may have seemed strident about the signs of the times and angry about the vices of individuals. But their postponements of reform were comforting to people who would stay in control short of a millennium in which many of them only half believed.<sup>33</sup>

Such an overpowering alliance between the technological establishment and "sectarian religion" is a terrifying prospect to the world-saving movement. Hope it isn't so. Meanwhile there is no need to borrow trouble. There should be plenty of opposition to go around right within the ranks of world-savers themselves. They too reflect typical forms of technological irresponsibility and hence hostility to world-salvation. Characteristically they forget that everyone, beginning with themselves, is saved always against his own will. Worse, they forget who the world-Saver is, and at what cost to his own survival. They will provide opposition enough.

"Who the world-Saver is" - there is no need to defer the Secret any longer. Already we have hinted that he is theos, that same One oddly enough who wages the world's prosecution. That should be reason enough, ordinarily, to turn for his identification to the back of the book, to that special Word – the Word from God, logos tou theou. And in a moment we shall. But first we might ask, as we did in the case of the intimidations and incriminations, is there any vaguest hint or analogy or telltale sign of his style of saving also in the forepart of the book – up here amidst the maze of the technological world with its mass phenomena and ordinary language? I turn you, please, to a mass phenomenon from our recent technological history, complete with its own revealing language.

Our reporter is Elie Wiesel. The scene, an actual occurrence, is a hanging of a Jewish boy in a Nazi concentration camp.

The SS seemed more preoccupied, more disturbed than usual. To hang a young boy in front of thousands of spectators was no light matter. The head of the camp

---

<sup>33</sup> Righteous Empire, op.cit., pp. 265-266.

read the verdict. All eyes were on the child. He was lividly pale, almost calm, biting his lips. The gallows threw its shadow over him.

This time the Lagerkapo refused to act as executioner. Three SS replaced him. The three victims mounted together onto the chairs. The three necks were placed at the same moment within the nooses. “Long live liberty,” cried the two adults. But the child was silent. “Where is God? Where is He?” someone behind me asked.

At a sign from the head of the camp, the three chairs were tipped over. Total silence throughout the camp. On the horizon the sun was setting. “Bare your heads!” yelled the head of the camp. His voice was raucous. We were weeping. “Cover you heads!”

Then the march past began. The two adults were no longer alive. Their tongues hung swollen, blue-tinged. But the third rope was still moving; being so light, the child was still alive....

For more than half an hour he stayed there, struggling between life and death, dying in slow agony under our eyes. And we had to look him full in the face. He was still alive when I passed in front of him. His tongue was still red, his eyes were not glazed.

Behind me, I heard the same man asking: “Where is God now?” And I heard a voice within me answer him: “Where is He? Here He is – He is hanging on this gallows...”<sup>34</sup>

Is that the world-Saver, this Jewish boy on a German gallows? No, nor does Wiesel pretend that. True, Wiesel’s own “voice within me” does make out the boy to be “God”, but God who with this final act of infamy exposes his own impotence and unfitness to run the world any longer. Herewith God is finished, never to haunt us with our anguishing theodicies about him anymore. As of the Holocaust, that last straw of a eugenic nightmare, there is no more God – and so of course no more world-Saver.

Is that the answer? For Christians, no. Yet for them, too, that does come appallingly and suggestively close to the answer – and right from the forepart of the book at that. But now the question is, Who is the boy on the gallows, really – this God? What is his name? For the Christians, whose spokesman I at the moment happen to be, his name is Jesus. Not that same boy, of course. It was another time, another place. The difference is decisive. For Jesus is who he is, irreplaceable by any other. He is not just anyone. He is not some trans-historical symbol. He is not a name for any and every “Christ-figure” who happens along. He is this man and not that one. That already is a lesson for every de-historicizing, de-personalizing, de-biologizing technology. Jesus is not an interchangeable digit. He is just that one young itinerant rabbi from the Galilean hill-

---

<sup>34</sup> (Tr. By Stella Rodway) Night, New York: Avon (1960), pp. 75-76.

country at just that time. Sooner or later the Name must be named. Such personal, historical irreplaceability – count that as Technological Chutzpah Number One.

His name comes from the back of the book no doubt, from that special Word. But he himself was to be found in the forefront, fraternizing with tax-collectors and hookers and other technologists. It is because of them, in fact, that his survival ran out. There was a coalition between the zealots of “sectarian religion” and the Roman professionals in administrative and military technology. They least wanted him to save their world, seeing what more sensible and more ethical plans they had for it. Yet he took their part and was answerable for them who had long since run out of answers. He took their place not only before the Sanhedrin and the Empire but before the ultimate Prosecutor. That took chutzpah. He knew full well how forbidden it was to consort with these irresponsible pots, these fabricated men and women, all of whom were under indictment and ticketed for dismissal and strictly off-limits to the “upright man”. It wasn’t that he did not know what the Word required of the upright man, namely, that he “walks not in the counsel of the wicked, nor stands in the way of the sinners, nor sits in the seat of the scoffers.” (Ps. 1:1) Yet he did the opposite, to the extent of breaching even the strictest ceremonial taboo, eating and drinking with them. That did take “chutzpah against God.” No wonder his survival was foreshortened, seeing how he also took the consequences for them. He was hoist upon a gibbet outside the walls of Jerusalem on a hill called The Skull next to the garbage dump one dark Friday afternoon. Yet even in face of this final incrimination he still had the chutzpah to remonstrate, “My God, my God, why have you forsaken me?” (Ps. 22:1; Mk. 15:34)

But the daringest chutzpah of all was not against God but by him, when he himself sided with the young rabbi and backed him up – motley technologists and all – by raising him from the dead. So now the Secret is out. Where is God? He it is, as the young rabbi, who is hanging on the gallows. It was he all along, the fawning Jewish “papa”, the last of the great spenders. What with his utterly indefensible defendants and their evasive answers and ridiculous fig-leaves, he finally took up their cause himself, consequences as well, and closed the case. In Jesus he did. In Jesus he is his own answer, his final responsum to his own intimidating, incriminating, interrogating criminate process. Where is God? Here he is.

It is not really a different question, only a corollary, when Christians ask next: Where are we now? For their answer is the same as their answer to the God-question: Where are we! Why, there we are, hanging on this gallows. That is their opportunity for audacity. That is their “chutzpah against God.” For what they dare to claim is that, although people must ordinarily accept their own responsibility and never shift it to others, “in Christ” there is an exception. He, these world-savers claim, is the one instance whom they may use as a cover, a stand-in, a go-between, a front, a fall-guy, (a schlemitzl?) the Suffering Servant of Yahweh – yes, a “fig-leaf”. To the ordinary God – to the same God, that is, but apart from Christ – this would be the rankest chutzpah indeed, because the most dastardly and irresponsible cop-out. Still the world-savers persist, risking everything on the conviction that God himself is in on this collusion, contrary to his otherwise unexceptional way of holding people themselves responsible. This one daring piece of

exceptionality might just appeal to technologists if only as relief from an otherwise unbroken cause-and-effect chain of retribution, debits and credits. This break in the retributive chain-count that as Technological Chutzpah Number Two.

This explains also why Christians' favorite prepositional phrase for Jesus is "for us," "for us human beings and for our salvation". Of course the phrase is always to be spoken, as all "chutzpah against God" must be, with "fear and trembling" and yet not without appropriate hilarity. Jesus, so these world-savers exult, is in their stead. In him they find themselves replaced, superseded, put to death and raised up new, their old irresponsible and incriminated selves supplanted by a whole new humanity. Chutzpah has its merry side. In fact, they claim to be junior deities, banqueting with God – "in Christ," that is. That is why they entitle him "Christ," which is to say Everyman. He is exchangeable with any and every poor doomed technologist. This shockingly egalitarian exchange of Christ with just any fabricated men and women might well provide the uproarious pick-me-up which is needed for modern technology's great problem: how to be somebody while being inter-changeable with everybody else? There is something almost flippant about the way Christ is most irreplaceably himself when he is most exchangeable with others. His being not just one-among-many but rather one-for-the-many-count that as Technological Chutzpah Number Three.

The substitute dying and rising by Christ himself is reenacted in the personal experience of the world-savers themselves only very haltingly and defectively. It is a penitential process, a drastic autobiographical transformation called metanoia. But for now it is still far from perfect, only beginning – like a dress-rehearsal or, at best, like the first or second act. This world-salvation movement is a drama with a big third act – The Last Analysis, what-the-world-is-coming-to, resurrection. Hence waiting, though not too patiently, becomes an important virtue. That too has spin-off value for technology, what with the latter's characteristic impatience over such apparent insolubles as death and birth. They are easier to live with when their solution is only a matter of time. Knowing that, in fact, and counting on the most novel improvements in The Oncoming Future does encourage bold adventure already in the present, even imaginative technological breakthroughs, like how to run the economy of Rome without slavery or how to monogamize marriage with agape. The whole transformation which the future of Christ promises does encourage now already what neo-Marxists call "anticipation": doing today what is not possible until tomorrow. That attitude of independence toward the world's time-table – count that as Technological Chutzpah Number Four.

Where are we? There, on the gallows – and way beyond. "Salvation" is not a bad word for that, describing as it does how irresponsible stewards may be terminated as they deserve and yet without actually losing them altogether – namely, through the intervening death of Someone else, into whose own transforming death and resurrection they are already beginning to grow.<sup>35</sup> Salvation of such proportions, to be sure, is not neatly

---

<sup>35</sup> This theme of replacing the irresponsible stewards by means of a death which does not however destroy them is of course an old theme in Christian theology – for example, in Athanasius. But I do not intend, as Athanasius did, that this substitutionary arrangement is for the purpose of rescuing God from his own dilemma. "It would, of course, have been unthinkable that God should go back upon His word and that

ethical or technological. In fact it may seem almost an affront to, a tweaking, of the ethical and the technological. Then again such radical salvation may just transpose both ethics and technology into a whole new key. Chutzpah, at least, has never been the same.

## 6. A Saving Advocacy

Salvation, as we implied earlier, has sometimes been misrepresented among us as a largely private, even privatistic transaction, with little saving benefit for anyone else except the Christian person immediately involved in being saved. That sort of isolation – the temptation is to call it self-centered – seems unduly modest and too easily satisfied. But there are other Christian traditions according to which the one being saved does share his salvation at least somewhat with the world around. No doubt the example which first springs to mind, especially in America, is what traditionally has been called evangelism, “bringing others to Christ.” But the two sorts of transaction I have in mind are nothing nearly so direct and person-to-person as evangelism. Or we may think of saving others – for example, saving their marriages or their health or even saving their environment – by treating them entirely. Again, the two forms of salvation-sharing I have in mind are not ethical either, at least not in the conventional understanding of that term.

These two salvational transactions could, I suppose, be called religious. A more descriptive term would be advocacy. They both involve Christians as advocates, in the first place to their society and in the second for their material world, in the first case by serving on that society’s behalf and in the second by serving as nature’s spokesmen. It is only fair to warn that both these forms of Christian advocacy, both of them very ancient, are apt to sound so fantastic as to boggle the technological imagination. But that might be reason enough for considering them.

The first advocacy form of salvation-sharing has to do with repentance, but on a society-wide scale. By that I am not suggesting that the whole society repent. In mass technological societies like ours that is inconceivable. What I do suggest – though the suggestion is hardly original – is that the repenting be carried by a penitential remnant of that society, its Christian world-savers, not as a self-martyred, Lord-knows-how-we-suffer elite but as a band of hopefuls within that society who can bear to face up to its current guilt and retribution with real prospect of winning divine relief for the society as a whole. The idea bears considering if only because it corrects the exclusively negative view of repentance which now prevails and because it breaks through those privatistic strictures which repentance seems to suffer in Fenn’s “more introversionist and quietist types of sectarian religions.” But the biggest commendation for this sort of Christian advocacy is that it actually expects results – for instance, for the nation’s politics or its economy – and, if there is anything to all this, gets results. It is a way by which Christians transfer the advocacy role which Christ plays in their behalf to a similar role they might play for their own technological society.

---

man, having transgressed, should not die; but it was equally...unworthy of the goodness of God that creatures made by him should be brought to nothing...In that case, what was the use of having made them in the beginning?...What, then, was God to do?” (Tr. By a Religious of C.S.M.V.S.Th.) The Incarnation of the Word of God, London: Geoffrey Bles (1944), pp. 31-32.



The best way to explain what I mean is to draw a parallel with an incident in church-history. What I am assuming – recalling from Part Two the evidence currently incriminating our technological society – is that this society is under a sort of siege. The parallel is with the siege which Luther perceived his own Christian Europe to be under from the invading Turk. Still, and that was the point of Luther’s pleas to his people, it was not really the Turk who was their ultimate menace.<sup>36</sup> Not the pagan Turk but God, the righteously indignant God, in whose stern hand the Muslim forces under Suleiman the Magnificent were but a retributive agent for visiting judgment on a decadent christendom. The antecedent, of course, was Assyria as “the rod of my anger” in the hands of Yahweh against his own covenant people Israel.<sup>37</sup> Similar things have been said about us by such prophetic critics of ours as M.L. King, Jr.<sup>38</sup>

But what good could something so spiritual as repentance accomplish against the Turkish invaders? Even if they were the rod of God, weren’t there still quite secular and technological means of dealing with them on their own level – say, militarily and diplomatically. Especially if what Luther called the “left-hand kingdom” was also the kingdom of God, wouldn’t such secular weapons have been precisely the most godly against a secular enemy? Precisely. But the secular enemy was not the only enemy, nor even the more threatening one. Behind the Turk stood that other, invincible One, with whom Europe would have to come to terms. Who still had the courage to deal with that One penitentially? Perhaps some faithful remnant. But then that bold remnant might just be the happy clue, the strategic secret, for lifting the siege from the empire as a whole. For with God off its back, desisting on account of the remnant and their Christ, the empire could then be free to face the Turks in their own strength alone. That way, though Suleiman would still be no pushover, he might at least be deprived of any unusual cosmic alliances. – Might similar results be hoped for in our own society if, say, the loss-of-control syndrome were to be de-fused of the divine Prosecution which inflicts it, leaving it to be solved on its own terms simply as a problem in technology? About all that can be said to that is that the Rabbi’s world-savers, having the courage to repent for their whole society, should also have the chutzpah to expect surprises.

A second advocatory form of salvation-sharing extends to the world-savers’ material environment. Again, a piece from the church-historical past will serve, this time from its liturgy: the so-called Alleluistic Sequence (the ninth century Cantemus cuncti melodium).<sup>39</sup> In it the choir appeals, for instance, to

Ye clouds that onward sweep,

---

<sup>36</sup> Martin Luther (tr. By C.M. Jacobs and R.C. Schultz), On War Against the Turk, Luther’s Works, America Edition, Philadelphia: Fortress Press (1967), vol. XLVI, pp. 155-205.

<sup>37</sup> Isaiah 10:5.

<sup>38</sup> See the present author’s chapter, “How Free Are the American Churches? A Clue from Martin Luther King, Jr.,” Max Seckler, Otto H. Pesch, Johannes Brosseder, Wolfhart Pannenberg (editors), Begegnung: Beitrage zu einer Hermeneutik des theologischen Gespraechs, Vienna: Verlag Styria (1972), pp. 765-777.

<sup>39</sup> The English translation here is by John M. Neale. A critical edition of the text appears in C. Blume, S.J., and J. H. Bannister (editors) Analecta Hymnica Medii Aevi, 55 volumes, Leipzig (1886-1922), vol. LIII, pp. 60-62.

Ye winds on pinions light  
 Ye thunders echoing loud and deep,  
 Ye lightnings wildly bright

And, like a cosmic cheer-leader, the choir coaxes these elements on, “in sweet consent, unite your Alleluias.” Any literal-minded technologist, upon first hearing the world-savers presuming to lead these meteorological forces in doxologies, might find it all rather dull. For obviously, he thinks, it is not lightning which sings “Alleluia,” nor clouds nor wind, but these wild-eyed world-savers who are putting such exalted words into the elements’ mute mouths. Exactly. Isn’t that also a vocation for world-savers, to speak up and sing out for those creatures who can’t, so that their glory is fulfilled in our acting it out for them?

Who know, after a dozen stanzas of this wild Christian revelry, the pitch rising with each stanza, until the whole roll-call of creation has been summoned to song – including the “birds with painted plumage gay,” “the beasts of earth,” “the jubilant abyss of ocean,” “ye tracts of earth and continents” and, next to last, all “children’s voices” – perhaps not even the most tone-deaf technologist can resist when the cue comes for his group:

Now from all men be outpoured  
 Alleluia to the Lord.

Allowing, understandably, for the technologist’s embarrassed harrumph after the whole transaction is over, and a quick look-around in hopes that no one has noticed, it is possible that he too will have discovered himself as an advocate for a creation which, until now, he might have assumed was only something to be pushed around.

But the Alleluiatic Sequence is but a tiny sample of what this world-saving guild of technologists do all day long. They are, as they call themselves corporately, the Body of Christ. Whatever organic function of that Body they severally perform – whether as its arms or feet, its stronger parts or weaker parts – they are all also its eyes and ears. As this new Body of Christ steps in for the old body, the world, and assumes anew those functions on which the old body has reneged, so now these Christian world-savers are now the eyes and ears vicariously of the whole blind and deaf and weary world. Where its vision has dimmed, they will have to do its seeing for it. Where it has lost its hearing, they must do its listening. Human beings were meant to be the eyes and ears of creation, but they have substantially given up on that. They have lost sight and sound of its grandest delights and have reduced them instead to something merely to be sold or calibrated or bull-dozed. The new eyes and ears will have to begin to recover them again and celebrate their forgotten joys with the New Song.

But they are not only creation’s voice and eyes and ears, these world-savers. They are its brain, too, and its hands and feet. Think of the dignity which accrues to something so humble, say, as cotton when it is fabricated as a swab in a clinic, rather than as wadding in the bomb which destroys the clinic. And what a vicarious dignity it is for the human technologist to stand in for the helpless cotton and carry out its perfection. That need not

be sentimentality, to be the cotton's advocate – not when we recall who it is who assigns the technologist's stewardship. Or in genetic research, to serve as advocate for those still unborn – in some cases by desisting from experiment and in others by entering upon it, but in both cases always for their sakes – is to begin to restore to human technology not just its ethical but also its doxological advocacy. It is a foretaste, now already, of what will finally be done for the whole groaning creation by the liberated sons and daughters of God.

## 7. Saving the Evidence

Indulge, please, a brief concluding scientific postscript, though it is important enough for a whole movement of world-saving technologists. Anyway the postscript brings us around to where the essay began: responsibility. Our technology, we said, is badly truncated when we evade those responsibility-structures inherent in our taking control of our world: the consequences which ensue from that control and which function morally as retribution and theologically as incriminating of our poor stewardship coram Deo. Even though we derived major insight into these responsibility-structures by recourse to a Word which confessedly is from God himself, still we described also some hints and traces of these same structures of his in our common technological experience today, particularly in America: certain mass phenomena, certain clues in ordinary language.

On the other hand, this evidence was often ambiguous and slippery. That is so, very probably, not only because the evidence is hard to read but also because there is not enough of it there, the responsibility-structures themselves being in serious process of erosion. All, to the hurt and loss of technology and technologists and their right to continue as the earth's stewards. All to the hurt, likewise, of ethics, which needs available public evidence of those structures in order to be convincing at all. World-savers would quite naturally, therefore, be concerned with salvaging these responsibility-structures as well, so fragile and yet so indispensable.

It is a feature of every good scientific method, says Aristotle in his On the Parts of Animals and elsewhere, to “save” (soozein) the phenomena.<sup>40</sup> A good explanation, in

---

<sup>40</sup> For example, see his De Generatione et Corruptione, Book I, 5, where within the space of a few lines Aristotle three times (321a, 17, 21, and 29) employs soozein in this hermeneutical sense. For other instances, see the entries under soozein and sooteeria in Hermann Bonitz, Index Aristotelicus (second edition), Gra: Akademische Druck – u. Verlagsanstalt (1955), pp. 741, 745-746. – “The object of his study was to discover some general theory which, in the Greekphrase, ‘saved’ – or, as we might say, explained without doing violence to them – the data which had been observed.” Ernest Barker, article “Aristotle,” Encyclopaedia Britannica, Inc. (1967), vol. II, p. 394a. – See also Juergen Mittelstrass, Die Rettung der Phaenomene: Ursprung und Geschichte eines antiken Forschungsprinzips, Berlin: DeGruyter (1963).

Theologians, so far as I know, have been slow to explore this hermeneutical significance of “salvation” in the sense of reclaiming, “using” the empirical data of history so as not to let that history go to waste or (in the language of the Reformers) become “useless” (inutile) or in the language of the Apostle Paul, to happen “in vain.”

Other related studies in Aristotle research are the following. G.E. L. Owen, Tithenai ta Phainomena, in Aristote et les problemes de la methode (Symposium Aristotelicum), Louvain: Editions Nauwelaerts-

other words, must explain the data without explaining them away. The good scientist “saves”, conserves, utilizes the evidences and does not let them go to waste. That is true also of every technologist.

But the same duty devolves upon the theologian, or, better, upon the theologian who lives inside every responsible technologist. The phainomena, as Aristotle calls them, apply as well to what we have been calling the evidence of the Creator’s critical creation, the crimate process. That intricate structuring of technological responsibilities to God requires the diligent stewardship of the world-savers as much as all the rest of the earth does. Nor is it enough simply to identify what evidence of those realities still happens to be extant. Isn’t it a mission of the world-saving technologists also to help create new evidence of those structures. And how to do that more effectively than by exercising and flexing the structures in day to day technological work, living out one’s ultimate responsibilities within them with faithful chutzpah, and in so doing becoming normative persons and “significant others,” pioneer people for the rest of the technological community and raising the ante for technological institutions generally? With new and audacious answers humming through the old wires, the responsibility structures themselves become more audible at the level of public phenomena.

But all of this would just have been false optimism and bravado had it not been for the sufficing responsum which the world-savers now enjoy in Jesus as Christ, in whose transforming death and resurrection they supersede themselves. Thanks to him the interrogations and intimidations and incriminations of their technological history need not be blinked but on the contrary may be seized and run with or even bolstered. Expect to see always new evidence of that.

---

Louvain, S.P.R.L. (1961), pp. 83-103. Owen’s essay is reprinted in J.M.E. Moravesik (editor), Aristotle: A Collection of Critical Essays, Garden City, N.Y.: Doubleday/Anchor Books (1967), pp. 167-190. – G.E.R. Lloyd, Aristotle: The Growth and Structure of His Thought, Cambridge: At the University Press (1968), pp. 57, 79, 284 ff.