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ARE ENHANCEMENT TECHNOLOGIES “UNNATURAL”? MUSINGS ON RECENT CHRISTIAN CONVERSATIONS

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Abstract

Although distinctions between therapy and enhancement are difficult to draw with precision, especially in marginal cases, recent Christian discussions of enhancement technologies accept the general plausibility of distinctions drawn between therapeutic interventions and enhancement technologies by appealing to general understandings of nature and human nature. However, such appeals continue to be plagued by conceptual imprecision on several matters, including the status of nature as a source of moral insight, the scope of human responsibility in light of God’s purposes, and the effects of sin and finitude on human freedom.

Keywords

concepts of nature; “created co-creator;” dignity; enhancement; finitude; justice; natural law

INTRODUCTION

For both religious and secular observers, recent developments in many areas of biotechnology pose conceptual and normative questions of profound importance. Important “boundary” issues concern the meaning of “normalcy” in an age of genetic interventions and possible new forms of discrimination based on such knowledge. Significant issues of justice are raised by the increasing “corporatization” of biotechnologies, by stark international disparities in the distribution of biotechnology resources, and by the appropriation of indigenous resources by multinational corporations whose profits accrue primarily to the developed world. Deep concerns are also voiced concerning the adequacy of current regulatory and policy guidelines and current oversight mechanisms to meet the challenges posed by privately funded biotechnology research. In short, biotechnology developments raise vitally important, interlinked issues that call for serious and sustained scrutiny – matters of deep conceptual, historical, and normative importance, as well as questions of justice and policy choice that require wide-ranging societal debate and deliberation.

A careful reading of the history of the interaction between religion and biotechnology shows that fundamental to many religious responses – positive or negative – are various interpretations of nature as a central concept with implications for the rightness or

wrongness of interventions into it. At times, appeals to nature as normative are explicit, as in references to “the integrity of nature,” “the intrinsic value of nature,” “tampering with nature,” or “the ordering of nature for human benefit.” At other times, moral appeals to nature are implicit, yet still central to debates about biotechnology. The result is that, while explicit and implicit evocations of nature as a norm abound in the interactions of religion with biotechnology, the answers to two basic questions remain unanswered or underdeveloped. First, precisely how is nature understood as a religious concept, *i.e.*, in what way is it normative? Second, what interventions into nature are obligatory, permitted, or excluded by various religious interpretations of nature?

The above questions are especially salient in religious assessments of so-called “enhancement” technologies, as distinguished from interventions that are described as therapeutic. “Therapy” is generally defined as the prevention or cure of disease, or as the restoration or approximation of return to normal physiological function. “Enhancement” is defined as the alteration of individual (or group) characteristics, traits, and abilities (both health- and non-health-related) beyond a measurable baseline of normal functioning. Both notions rely on broadly shared understandings of disease and illness, which depend in turn on the meanings of “normalcy” and “natural species function.”

The distinctions we draw between disease/illness and therapy/enhancement rely upon notions of nature, naturalness, and normalcy in their very definition, but the latter concepts involve a complex mix of descriptive and prescriptive components. Nature is often philosophically defined as that which is independent of significant human influence or control, in effect, that which is given or that which is independent of human choice. In classical Aristotelian and Thomistic terms, nature is that which is the “essence” (*essentia*) of something. (The latter understanding is especially influential for Roman Catholic natural law reflections on the appropriate moral duties associated with the pursuit of human goods.) More neutrally, nature is described, especially in recent biology and ecology, as anything done by any organism, including humans. And classically, nature (*physis*) can be contrasted with art (*techné*) or with custom (*nomos*). Yet in Jewish, Christian, and Islamic theological reflections, however nature is described, it is never seen as a brute cosmological fact, but as the result of a divine act of creation, with creation itself interpreted in various ways. While nature is always interpreted in light of God’s purposes, perspectives on nature, and the theoretical and practical links drawn between nature and human nature depend on a given tradition’s interpretive categories and predilections. A core issue emerging from such theological discussions is the appropriate character and scope of human responsibility for the created order, including, in an age of genetic engineering, the physical substratum of human life itself as an object of intervention and manipulation.

Human enhancement technologies raise important theological issues, then, because they tend to blur distinctions we have long taken for granted between the human and the non-human, between external nature and our own nature. Biotechnology may be defined as the use or alteration of living things in processes that benefit humankind. But increasingly, as developments in genomics, nanotechnology, informatics, and human-machine hybridization multiply, the commitments of scientific mastery that defined the so-called “Baconian project” will be turned upon ourselves as alterable objects. Troubling theological questions

arise, therefore, because such possibilities challenge us to consider the appropriate warrants for, and limits to, changing ourselves in ways not previously imaginable.

I will proceed in this paper as follows. I will first consider, in brief compass, a range of Christian perspectives on created nature, all of which are represented in recent theological discussions and all of which are of general relevance to the ways that assessments of enhancement technologies are made. When I have completed that review, and by way of conclusion, I will suggest that in order to make sense of appeals to nature and the natural in debates about enhancement, we will need to articulate, with greater care and precision, the conceptual “bridgework” between theological perspectives on nature and a number of related concerns, especially appeals to justice and human dignity.

RECENT CHRISTIAN DISCUSSIONS OF ENHANCEMENT TECHNOLOGIES

Among recent discussions of genetic enhancement technologies by Christian ethicists, theologically informed concepts of nature and “the natural” are interpreted in various ways that lead to different assessments of current and prospective efforts at enhancement. It is, of course, inaccurate to speak of some univocally “Christian” perspective on genetic therapy or enhancement (or biotechnology more generally), because a range of perspectives and conclusions can be identified both within and across traditions. At the same time, despite such variety, a number of shared Christian emphases serve to distinguish those perspectives, writ large, from secular approaches. And that general distinctiveness is, in its own right, unsurprising; one would expect that appeals to a *created* nature, interpreted in light of God’s purposes, would transform non-religious accounts of nature as an independent domain. Nature as God’s creation situates judgments about the morality of human interventions, including enhancements, within an expressly theological context. At work across the range of Christian perspectives on enhancement technologies will be descriptions of God’s creative purposes as expressed in nature, the effects of sin upon God’s original purposes, the availability of nature as a source of moral insight, and the scope of human responsibility in our relations with and alterations of nature. Especially important, for discussions of the latter, will be differences between perspectives that emphasize the primacy of human stewardship, with a literally “conservative” approach, and those that stress the role of human beings as “created co-creators,” with more liberal implications for judgments about the appropriateness, indeed the necessity, of humans in partnership with God’s purposes in the ongoing evolution of creation.

Consider the range of possible Christian perspectives on created nature, all of which are represented in recent theological discussions and all of which are of general relevance to the ways that assessments of enhancement technologies are made. Nature may be viewed as intrinsically valuable (Genesis 1: 31 “Then God looked over all he had made, and he saw that it was very good”). This perspective emphasizes humans as stewards of created nature according to God’s initial purposes. At the same time, nature may be seen as fundamentally disordered as the result of sin. In light of the deleterious effects of the Fall on *both* external nature and on human reason, this emphasis reinforces the importance of humility and caution in altering nature.

Alternatively, accounts that find nature a relatively trustworthy source of insight may emphasize the appropriateness of human responsibility to work as partners with God's purposes. In the medical context, the latter emphasis provides the moral basis for compassion, expressed through the commitments of caring and curing. For example, in traditional Roman Catholic moral theology, reasoning about the appropriate pursuit of human goods establishes a set of natural-law-based duties. Catholic perspectives are often judged to be conservative, because "natural" tendencies and forms of human flourishing have traditionally been interpreted in fairly static terms. However, more recent Catholic discussions have proceeded in more historicist terms, with an emphasis on the dynamics of human responsibility in an evolutionary universe.

In historical contrast to that traditional Catholic positive appraisal of nature, even after the Fall, classical Protestant thought has been less prone to appeal to fallen nature (including human nature) as an unambiguous source of moral insight because of its disordered character as the result of sin. Protestant theologian Reinhold Niebuhr developed perhaps the most influential perspective on sin in twentieth century Christian thought. For Niebuhr, "[The fundamental human temptation] resides in the inclination of man either to deny the contingent character of his existence (in pride or self-love) or to escape from his freedom (in sensuality)"[Niebuhr, 1964]. Ethicist Mark Hanson applies Niebuhr's insight to efforts at enhancement and reaches the following conclusion:

A Protestant perspective ... recognizes that all aspects of human existence are, in a certain respect, defective and in need of treatment. But ... it affirms the inherent goodness of creation and diagnoses the "defects" in the human situation in terms of sin. The result is a very different way of thinking about the prospect of human enhancement and what it might mean. It suggests that enhancement technologies and the values that motivate them must be approached with suspicion

[Hanson, 1999, p. 127].

Given this negative appraisal of human motivations, Hanson's key suspicions of enhancement follow straightforwardly. First, enhancement risks "[expanding] the realm of suffering by equating it with finiteness itself, or through progressive devaluation of the contingencies of finiteness" [Hanson, 1999, p. 132]. Second, enhancement technologies may promote pride or self-absorption rather than "community and cooperation" [Hanson, 1999, p. 132]. As a final benchmark, Hanson asks "whether enhancement technologies alter or aim to modify that essential state of humanity characterized by its dual nature of [being] both free and finite. The dialectical tension created by this state is not only the basis for sin, but also creativity and ultimately faith" [Hanson, 1999, p. 136].

Hanson's Niebuhrian sentiments are countered in recent Protestant discussion by an emphasis on a more positive and capacious role for humans in repairing, restoring, and even improving created nature. Theologian Ted Peters is a prominent representative of this alternative perspective. Peters emphasizes the duties incumbent on human beings as "created co-creators" with God of the human future [Peters, 1997]. In contrast to the Niebuhrian perspective developed by Hanson, Peters interprets the dialectic between creation and fall more optimistically. First, Peters emphasizes the goodness of a continuously evolving

creation rather than the fallenness of the human condition. In this more positive light, he develops an account of the opportunities and challenges for humans to be created co-creators in that ongoing process. The metaphor of “playing God,” which is often interpreted in negative terms, is for Peters an apt description of human *creativity*, the primary attribute he associates with our capacities as creatures made in the image of God. Peters therefore reaches the following more open-ended conclusion about prospects for genetic enhancement:

... within the scope of a theology of creation that emphasizes God’s ongoing creative work and that pictures the human being as the created co-creator, [a] vision of future possibilities, not the present status quo, orients and directs ethical activity. When applied to the issue of germline intervention for the purpose of therapy and *even for enhancing* the quality of human life, the door must be kept open ... realism about technological limits and risks is insufficient warrant for prematurely shutting the door against possibilities for an improved human future [emphasis mine]

[Peters, 1995, p. 379].

There are clear differences between the relative pessimism and optimism toward human nature and capacities in the above Protestant perspectives, but notice what is not an item for explicit disagreement between them; viz, the status of created nature (including human nature) as a “given.” Both simultaneously affirm both the relative goodness of God’s created nature and the effects of sin upon a now fallen natural order. Their differences emerge, then, in their estimates of human capacity for appropriate choice in light of natural limits. Hanson concludes that enhancement runs a significant risk of conflating remediable suffering with the very conditions of human finitude, in effect a Promethean effort to *deny* our creaturehood. Peters, by contrast, sees human creativity as our primary capacity as imagers of God, and sees *both* therapy and enhancement (at least in principle) as activities that *affirm* our creaturehood. These contrasts, while profound, are influenced, before all else, by different understandings of Christian anthropology rather than by different appeals to “nature” as a normative category with independent valence.

I turn now to recent Catholic discussions of enhancement. In contrast to classical Protestant thought, Roman Catholicism embodies a relatively positive appraisal of the natural moral insight available to persons as a function of God’s grace in creation itself. According to Aquinas, human beings share in God’s eternal law by virtue of their rational nature; men and women are naturally capable of reasoning about human goods as the ends of choice and action. While original sin has distorted the human capacity to know and to do the good, Catholic moral method retains greater confidence in our natural moral capacity to discern the good, in our moral will to do the good, and with its emphasis on teleological reasoning about human inclinations as trustworthy “givens” of experience. Central to the Catholic tradition, then, is its characteristic confidence in the mutuality between the truths of Revelation and natural moral insights.

As a result, Roman Catholic moral theology remains quite open in principle to medical interventions that are therapeutic in nature, though within clear constraints. For example,

official Catholic discussions, while allowing somatic cell genetic therapies that can be effected in vivo, reject all forms of genetic therapy, including so-called “therapeutic cloning,” that involve the destruction of embryonic human life. Thus a general Catholic position “for” or “against” a range of interventions cannot be formulated without attending to the actual techniques involved in particular circumstances.

What, then, about the prospect of genetic enhancement in Roman Catholic thought? One can discern two quite different emphases in recent Catholic discussion. On the one hand, enhancement technologies, in contrast to therapies, tend to be viewed with significantly more caution and reservation. In perhaps the most representative magisterial discussion of genetics, John Paul II, in an address entitled “The Dangers of Genetic Manipulation,” affirmed the therapeutic commitment as a central value:

A strictly therapeutic intervention whose explicit objective is the healing of various maladies such as those stemming from deficiencies of chromosomes will, in principle, be considered desirable, provided it is directed to the true promotion of the well-being of [persons] and does not infringe on [their] integrity or worsen [their] conditions of life

(John Paul II, 1983).

He follows that positive judgment with a sense of caution for any genetic intervention that cannot be described in therapeutic terms:

... it is of great interest to know if an intervention on genetic inheritance that goes beyond the limits of the therapeutic in the strict sense should be regarded as morally acceptable. For this to be verified, several conditions must be respected and certain premises accepted

(John Paul II, 1983).

John Paul then develops a number of principles to illuminate the moral assessment of enhancements, with two themes of particular importance. First,

The biological nature of each person is untouchable in the sense that it is constitutive of the personal identity of the individual throughout the whole course of his history. Each human person, in his absolutely unique singularity, is constituted not only by his spirit, but by his body as well... To respect the dignity of man, consequently, amounts to safeguarding the identity of the man “corpore et anima unus,” as Vatican Council II says

(John Paul II, 1983).

Second,

... the fundamental attitudes that inspire the interventions of which we are speaking should not flow from a materialist mentality aimed at a human well-being that is, in reality, reductionist. The dignity of persons transcends their biological condition

(John Paul II, 1983).

At first (or even second) blush, John Paul’s constraining principles appear fairly conservative in their implications for judgments of enhancements, in contrast to his more

positive appraisal of therapeutic interventions. At the same time, even here, one observes a certain tentativeness, a refusal to condemn outright, in the pope's judgment. As he says, it is "of great interest" to know whether enhancements can be morally justified, and that assessment will depend less on considerations of what *currently* constitutes the natural than upon the avoidance of certain attitudes, viz., instrumentalism and reductionism towards human persons in their embodied nature. While the pope's words are clearly cautious in overall tone, they do not preclude further discussion or development nor should they be read as an outright condemnation of all forms of enhancement. If enhancements are to be condemned *tout court*, that conclusion will rely upon, and be linked to, other sorts of considerations – concerns about human dignity and justice, greater social marginalization between groups, and so forth – rather than judgments about the status of nature and the natural as, in themselves, morally decisive.

In contrast to John Paul's fairly cautious tone, other voices in recent Catholic moral theology suggest far greater openness to both health- and non-health-related enhancements, although such openness is expressed at the level of broad anthropology rather than judgments about specific cases. Kevin Fitzgerald exemplifies this approach. Drawing on anthropological categories developed by systematic theologian Karl Rahner, Fitzgerald seeks to shift the terms of the discussion to a more dynamic understanding of human meaning and possibility. According to Rahner,

... although man has an essential nature which he must respect in all his dealings, man himself is a being who forms and molds his own nature through culture, i.e., in this case through self-manipulation, and he may not simply presuppose his nature as a categorical, fixed quantity

[Rahner, 1972].

In light of Rahner's more open-ended vision of human culture and human nature, Fitzgerald's understanding of human responsibility seeks to expand the context for decision-making about new technological possibilities. According to Fitzgerald,

If ... dynamic philosophical anthropologies are to be used in the ethical analyses of human genetic interventions, one immediate change would be to shift the focus away from discussions about ... therapies versus enhancements ... because ... these distinctions are no longer central to the issue. Instead, the focus would be on the more fundamental questions concerning human nature and human flourishing as key to self-determination

[Fitzgerald, 2005, p. 90].

In some respects, the different emphases at work in the Catholic debate parallel those in the Protestant conversation outlined above. As before, the contrasts that emerge between John Paul's conservative tone and Rahner's more affirmative assessment flow from characteristically different emphases (and estimates) of the human capacity for appropriate choice in light of natural limits. John Paul expresses concern that the prospects of enhancement invite attitudes of reductionism toward persons as well as dangers of greater marginalization between groups. Rahner and Fitzgerald appear to work with a higher anthropology, insofar as they define human creative capacities in more open-ended fashion.

Yet despite the relevance of natural law reasoning to papal pronouncements on other issues (e.g., artificial contraception and new reproductive technologies), John Pauls's judgment about the *general* prospect of enhancement emerges as less absolutist in tone. As a result, the possibility remains that some forms of somatic enhancement -- those not involving actions deemed *intrinsically* disordered on natural law grounds -- might be judged in more positive terms, even from a generally conservative perspective. As with the Protestant debate, judgments about particular enhancement technologies will be linked to larger concerns -- social justice, considerations of dignity, likely attitudes -- rather than to appeals to "nature" as an independent normative category.

NATURE AS "MALLEABLE"

Let me propose that an interpretation of created nature as "malleable" by humans in accord with God's purposes provides the appropriate general description for assessing the range of Christian interpretations of genetic therapy and enhancement. Assessments of genetic alterations of the human body will involve explicit analyses of the complex relations between nature and human nature and the ways that the interactions within and across those categories affect the descriptive and prescriptive implications for each. Judgments about the appropriate scope of human responsibility, then, will require attention to the ways that God's purposes are construed in relation to the natural order and, most notably for issues in genetics, human responsibility for alterations of the human genome as itself now the direct object of human interventions.

In light of the centrality of healing in the Christian narrative, the justification of therapeutic interventions appears to follow in straightforward fashion. "Health" can be understood as an important constituent of human being; efforts to restore "normalcy" appear, in general terms, to comport with that emphasis. In contrast, at least on the surface, enhancement emerges as an effort to alter normal or natural function in ways that move beyond the language of "healing," understood in terms of normal physiological (and psychological) function and thereby appear to lack a biblical (or more generally theological) warrant.

Nonetheless, matters may not be as simple as they appear. Judgments concerning the appropriateness of human efforts either to restore "normalcy" or to enhance it *both* assume that nature (here the biological basis of human nature) is malleable to human choice and action. Consider, for example, end-of-life decision-making, where efforts at "healing" are contextualized by a range of considerations beyond any simple appeal to the natural. A sophisticated reading of the distinction between ordinary and extraordinary means of treatment, while including a notion of normalcy in judgments about a given treatment's "reasonable chance of success," also balances that judgment with a careful consideration of benefits and burdens. Even a "reasonable" treatment, measured against the sole endpoint of "restoring health," may be outweighed in particular circumstances by the prospect of disproportionate burdens caused by the treatment thereby rendering such means extraordinary. If that is the case with "therapeutic" interventions, why, then, should our assessments of enhancement be limited to some simple (if not simplistic) equation of naturalness and normativity? To be more precise: If the aim of "health" (construed as normal function) is not dispositive of our judgments about appropriate therapeutic choices,

why should a narrow construal of normalcy be dispositive of our moral judgments about the legitimacy of enhancements?

I would emphasize, instead, that the “givenness” of nature by God to humans as an available resource is assumed in describing it as malleable, whether for therapeutic *or* enhancing purposes. The notion of (human) nature as malleable, of course, is a conclusion that follows, both as a matter of Christian theology and of general anthropology. While nature has independent standing, Genesis describes it as the appropriate realm of human dominion. While any individual’s human nature has a certain givenness, it is also the appropriate focus of educational and cultural “shaping” in order to reach its full maturity. Hence the description of nature (here human) nature as malleable highlights the question of appropriate human choices about altering nature in ways that simpler line drawing (naturalness and unnaturalness, normalcy and abnormalcy) do not. Thus, judgments about the appropriateness of human interventions and alterations require that we move beyond the assumption that nature, in itself, will provide sufficient grounding for subsequent normative reflection. The category of “created nature” asks us to situate a malleable nature in larger theological context.

At the same time, the effort to determine the appropriate nature and scope of such malleability – i.e., to place it in larger theological context – emerges as a complex task. For example, one can identify a cluster of theological themes that appear to have independent standing in assessments of enhancement. They include an appeal to our human dignity as creatures made in the image of God (*imago Dei*); an emphasis on the unitary nature of body and soul in our experience; the language of sanctity of life; a stress on the concrete requirements of neighbor love; a perspective on justice that prioritizes the plight of the poor and socially marginalized; the mandate of healing within the context of love and justice; the central social reality of community (both the Christian Church and the larger society); and the importance of parenthood and family. All such themes are influential in assessments of enhancement, although they are invoked by different commentators to reach different conclusions. And while in some instances, these themes provide an ample context for theological reflection, for other commentators, concepts of nature and the natural often continue to function as either unacknowledged or underdeveloped features of arguments that may well be separable from them in principle. The failure to attend explicitly to such background features is, in my judgment, a significant shortcoming of many putatively independent arguments raised against the prospects of enhancement.

A MODEST CONCLUSION

In light of the variety of perspectives surveyed above, the question remains whether an identifiably “Christian” perspective will generate distinctive judgments on specific cases of enhancement, current or speculative. On the one hand, a blanket approval or condemnation of all enhancement technologies is unlikely to be forthcoming, even from perspectives, such as John Paul II’s, that might be assumed to reach generally negative judgment. This greater-than-expected fluidity may, in fact, be unsurprising. After all, Roman Catholic thought retains an emphasis on case-based reasoning, while much of Protestantism stresses the importance of moral discernment according to particular circumstances.

On the other hand, there are likely to be ways that Christian theological interpretations and judgments of enhancement technologies, as we have suggested, will emerge as somewhat distinctive. In a very perceptive analysis, theological ethicist Gerald McKenny describes three levels at which assessments of technology are made [McKenny, 2002]. A first level of discussion focuses, either currently or prospectively, on particular techniques and devices. A second level of discourse engages the range of social practices and cultural understandings that are altered by the introduction of new technologies. At this level, we are assessing not simply one device or technique, but the ways that its introduction reframes our cultural practices and understandings. At a third level, McKenny situates discussions of technology as an entire way of relating to the world. At this level, one finds analyses and (quite often) critiques of technology as a way of world-making, as a form of “constituting the world as means to ends or as objects for human manipulation” [McKenny, 2002, p. 92].

McKenny notes that the third level of discourse is often the place where theological discussion proceeds, but he recommends that we concentrate on the second level -- how technologies, once introduced, alter social practices and self-understandings -- for at least two reasons. First, “the third-level toolbox contains blunt instruments ... this kind of analysis does not help us much in evaluating particular technologies and their uses” [McKenny, 2002, p. 93]. Second, if, as a result of that vagueness at the third level, theologians revert to technology assessment at the first level, the usual policy discourse of risks and benefits, respect for persons, and considerations of procedural justice take center stage, and “theology fades into the background” [McKenny, 2002, p. 93].

How might such a second-level discourse on enhancement technologies proceed? Much as the modern biomedical ethos has been reshaped by a technologically driven commitment to cure, sometimes at the expense of an earlier emphasis on care, the shift to enhancement technologies may result in significant further changes in the institution of medicine, in cultural practices, and in individual expectations. Increasingly, an ethos of enhancement may tend to shift the focus of biomedical interventions from the “needy and vulnerable body of disease and death” to desired body, the “the body as the perfect expression of one’s aims, ideals, and projects” [McKenny, 2002, p. 100]. From a more conservative theological perspective, such a shift runs the risk of confusing remediable suffering with the conditions of creaturely finitude.

McKenny is surely correct to recommend this sort of focus on second-level discourse. He may also be correct in his judgment that enhancement technologies are likely to exacerbate certain attitudes and practices that already quite evident in today society. But that sort of case will need to be made with due attention the potential for both good and ill that enhancements raise. In order to engage that broader range of speculative and practical reflection, and by way of conclusion, let me suggest that in exploring the relevance of concepts of nature to debates about enhancement, future theological ethics will need to articulate, with greater care and precision, the conceptual “bridgework” between perspectives on nature and the following four concerns.

1. *Conceptual and normative links (and distinctions) between nature and human nature need to be drawn with greater precision.* Here the theological meanings of

the Genesis mandate of human “dominion” over nature require careful scrutiny; dominion can have, as we have seen in the Protestant and Catholic discussions of enhancement, more conservative implications (the language of stewardship) or more activist overtones (the language of “created co-creation). On either reading, however, determining the scope of appropriate dominion over the genetic aspects of our own nature will require greater attention to the psychosomatic unity of our embodiment and the need to avoid attitudes that are deemed sinful (in Niebuhr’s terms) and/or as violations of human dignity (in John Paul II’s terms). At the same time, we will need to consider, in explicitly theological terms, the potentially positive features of enhancement. For example, despite concerns about justice and social attitudes, it is hardly obvious that all proposals of genetic enhancement involve temptations to idolatry, pretensions of mastery over finitude, or attitudes of reductionism. To see biological nature as in some circumstances manipulable is not thereby to reduce ourselves to “merely manipulable nature.” That unwarranted conclusion is itself a form of reductionism, in light of the perspective offered by Rahner and Fitzgerald in the Catholic conversation or Ted Peters on the Protestant side. Nor need efforts at enhancement entail the sin of pride. Much of human culture, including education, can be seen as enhancement of the naturally given, in ways that *literally* reshape our biological selves. (Reading, for example, literally changes the structure of the brain, as will years of piano playing or tennis practice.) To be sure, enhancement efforts to reshape ourselves appear far more direct than the more diffuse effects of earlier cultural and educational influences. Yet it remains an open question whether such is more ethically problematic than current forms of enhancement seen as both laudable and quite moral.

2. When drawing links between what is natural to human well-being and appeals to justice and human dignity, underlying theological and anthropological assumptions should be acknowledged and more fully articulated. It is not obvious that all efforts at enhancement are linked to the likelihood of greater injustice among social groups. While critics are correct to point out the plausibility that current disparities may be exacerbated, as well as the attendant dangers of commodification and consumerism, one can envision more positive scenarios. Indeed, certain forms of enhancement, e.g., effective and efficient forms of greater cognitive enhancement, *were they to be made more generally available*, might contribute significantly to greater societal well-being and individual flourishing. That example is, to my mind, particularly instructive. Cognitive enhancements hardly warrant the theological conclusion that such efforts are, in themselves, attempts to deny the conditions of our finitude. One might, with equal plausibility, reach the opposite conclusion – that the more we know, the more we’ll know that we don’t know. Again, the issues will not be resolved by simple appeals to the “natural” as having, in itself, of normative force.
3. *We need a clearer sense of “institutional realism” in the ways that we discuss the practices of science and technology.* By “institutional realism,” I mean two things. First, we must attend to the actual practices of modern science and technology, including genomics and other fields where the prospects for enhancements are most

regularly discussed. To assume, as do some critics of enhancement, that the context of scientific discovery can be neatly compartmentalized – therapeutic research on one side, enhancement research on the other – may prove something of an armchair exercise. As the history of science attests, “basic science,” in both physics and biology, often has unintended technological consequences, for both good and ill. We can, of course, distinguish morally acceptable from morally unacceptable forms of current research; indeed, that is the rationale for regulatory oversight and institutional review boards. But to assume that speculative scientific inquiry can be delimited *ab initio* may be to misread the logic of scientific discovery itself.

Second, “institutional realism” requires that attention be paid to the different forms of moral discourse at work in ethical discussions of enhancement. With a somewhat different typology than McKenny, James Gustafson discusses four such modes, which he labels ethical, prophetic, narrative, and policy discourse [Gustafson, 1990]. Ethical discourse is largely the language of principles, rights, and duties. Prophetic discourse, by contrast, is often sweeping and passionate in its broadsides against cultural trends and social sins. Narrative discourse is the language of story and community, of parable and paradox, of saints and heroes. Policy discourse is the language of compromise and tradeoffs; it works with the values already embedded in the choices that we have made.

It is important to recognize the strengths and the weaknesses of these various modes, and to appreciate the need efforts to synthesize the insights available from each. Proponents of enhancement often tend to equate the cultural *status quo ante*, especially the language of the market, with what is morally justified. Critics of enhancement, especially those accustomed to prophesy, tend to move quickly from broadsides against current general tendencies in the culture to equally negative, and often unnuanced, judgments about particular possibilities. Those who adopt narrative discourse in their arguments have robust appeal to particular communities but may fail to engage a wider audience. Those who prefer the policy discourse of consensus building often appear resigned to a public posture of moral minimalism.

As Gustafson suggests, each of these modes of discourse, is at some level necessary to the moral deliberations of particular communities and society at large, but none will be in itself sufficient. By way of closing let me suggest the relevance of Gustafson’s insights to ongoing debates about enhancement, both secular and religious. On the one hand, I recommend that we pay greater attention to the specifics of particular proposals rather than settle for sweeping generalizations pro or con. On the other hand, I affirm the power of prophetic imagination. It is clear that prospects of genetic enhancement raise significant social issues, especially when considered in light of requirements of justice and the common good. But I have also suggested that current Christian discussions of enhancement include both opponents and proponents. Finally, as debates about enhancement continue, I believe that what will be more theologically persuasive will be the conceptual bridgework that we build between what is deemed “natural” in current circumstances, what may be “natural” in future circumstances, and the appropriateness of human agency in effecting that transition.

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Biography

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