

article

Designer Babies – Why Not?

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Though many objections can be levelled against the idea of the practice of genetic intervention to produce ‘designer babies’, upon examination they are shown to hinge on features which concern parental intentions towards their children, rather than features specific to the means involved. These intentions may be pursued by a variety of social practices which may, though need not, involve a measure of ‘traditional’ genetic selection (i.e. in terms of the identity and characteristics of the reproducing partners). This paper reviews a number of these objections and, by parity of reasoning, rejects their claim to count specifically or decisively against genetic intervention in pursuit of ‘designer babies’. Rejecting these objections does not lead to the endorsement of ‘designing’ babies, but it shows that any unease must be grounded elsewhere and defended by other arguments.

Introduction

Unfortunately I must begin this essay with an admission. Whatever I shall conclude about the permissibility or otherwise of ‘designer babies’, the fact is that I am already the co-designer of two babies myself. It would, I think, be wrong to conceal this from the reader. Moreover I was fairly thorough about the matter. To begin with the most controversial aspect, I personally guaranteed these babies’ ethnic characteristics by means of the selection of their other parent — though admittedly that selection was made for other reasons. I also arranged with a fair degree of accuracy the exact years into which they would be born, and thus succeeded in establishing a specific social and political context for their upbringing, incidentally also excluding the risk that peer group influences would include certain unfortunate tendencies in popular music, specifically a tolerance of Country-and-Western. I have secured for these babies a half-share in their nationality — that is, the Welsh half — in keeping with a long-cherished conceit that I might arrange for my own genes to share in the *true and complete* revival of Welsh rugby scheduled for the years 2010 and beyond. Finally, and not content with these essentially pre-embryonic decisions, my partner and I have made a number of detailed social and environmental provisions regarding these babies’ later developmental stages, including specifying language of education, a number of cultural ideals, and a certain brand of humour. Whilst some future variation in any or all of these aspects remains possible, at this stage we flatter ourselves that the two units are meeting their design specification within normal tolerances.

Given this fairly wholesale commitment on my part to the traditional enthusiasm for designer babies, the reader might then wonder why it is that I would admit to any unease concerning one additional route to the impressive existing armoury of methods, namely, genetic modification. And I do admit to unease. Some might think that a philosopher is paid to be generally uneasy (it was Oscar Wilde who defined philosophy as the art of bearing up under other people’s troubles) and that he should take specific unease in his stride, but philosophers too are frail in the face of their own threatened inconsistencies. My particular problem with respect to the *genetic* route to ‘designer babies’ lies simply in finding convincing rational justifications for the unease which I palpably feel. Those which I have considered seem to me to be fragile, some distinctly so. Most of this essay will consist in reviewing them — albeit briefly, since I distinguished thirteen of them. The rest of the essay will consist in reflecting on their possible intensification in the special case of altering an individual’s own *reproductive* inheritance, and in identifying and attacking the reductionist presumption on which most of them (if not all) depend.

Before beginning, I need to make a make a proviso. I will deal with interventions intended to produce specific positively-valued characteristics, rather than interventions intended to remove or filter out disvalued ones. Of course one might object that these are two sides of the same coin — perhaps from the Aristotelian perspective that, for many qualities, surfeit and deficit are as bad as one another — and if this be granted then my approach will seem arbitrary. I will evade this by being merely pragmatic, and will restrict

the idea of disvalued characteristics to inherited pathological states which would be very widely agreed as undesirable, for instance conditions such as cystic fibrosis, or muscular dystrophy. Freedom from such conditions would be almost universally regarded as a good. It is true that even here it is a matter of dispute whether genetic intervention to avoid such a condition is warranted, but I propose to grant, for the purposes of argument, that such intervention *is* warranted in those circumstances. My reason is that if we do not grant even in principle the possible legitimacy of genetic intervention here, then we are unlikely to grant it anywhere; all other bets then seem to be off, leaving us with mere denunciation where we might have hoped for discussion. But scepticism here is, I suspect, a minority pursuit. However, granting such intervention does not entail accepting genetic modification designed to improve on Nature's model, and since this remains the more reliably controversial project then I propose to confine my discussion to it. If we are unable to justify our unease here, we shall hardly be able to voice convincing protest regarding the prevention of admitted harms such as cystic fibrosis.

By contrast, then, with the all-but-universal aversion to certain inherited bodily conditions, the matter of a desirable height for an adult human is far less clear-cut. Whilst some people might like to have fairly or even very tall children, not everyone agrees that being fairly or even very short is intrinsically undesirable. So I will consider interventions to bring about greater height as being the pursuit of a specifically valued characteristic, rather than as the attempted avoidance of any generally recognised harm. With this understanding of 'designer babies' as being customised packages of detailed infant merit, rather than simply nominally healthy infants, I will now review those objections which I initially imagined might sustain my unease concerning genetic intervention.

1. Sheer Modification

A first objection is that genetic modification of people is just that — a modification of people — and that this is somehow intolerable in a liberal society. But, as my review of my own parental interventions shows, we are modifying people all the time. This is not, by the way, confined to infants. Throughout our lives, we are modified *socially* (by our upbringing and then by our conditioning for employment and for the wider aspects of citizenship);

intellectually (by any aspect of education, which is commonly said nowadays to consist in a lifelong process of learning); *morally* (by praise, punishment, prejudice; by redemption or by Grace); and even *biologically* (by influences over our diet, work patterns and leisure choices, and by direct medical and surgical manoeuvres). If genetic modification is wrong, then either all modification of people is wrong — giving grounds for condemning all the influences I have just listed — or the wrongness must lie in something other than the mere fact of changing people.

2. The Denial of Choice

Perhaps then the wrongness lies in the fact that those who are modified genetically are denied their own choice in the matter. But again, this will not do. Exactly the same is true when we determine how we bring up our children: for instance, when we condemn them to a life of piano lessons, ballet classes or marching bands; when we send them to denominational or single faith schools; equally of course when we *omit* to send them to such schools; when in a bilingual context we bring them up to speak (for example) only Welsh, only English, or both; and in the longer term when bring them up in a way that reflects our presumption, for instance, that they are going to be heterosexual. If it is wrong to make choices for children without involving them in the choice, the very notion of parented upbringing is under threat.

3. Unpredictable Consequences

Perhaps we are uneasy because the consequences of genetic modification cannot be predicted. By now our first line of response is established. We need to know, with regard to any principled objection to genetic intervention to produce 'designer babies', whether this is something that is true only, or especially, of genetic rather than social means of modifying our children. Applying this response to the present case, the fact is that we cannot at all predict the social consequences of any of the social influences we have already considered — simply because we cannot predict the future, full stop. There are unpredictable side-effects to *all* life-choices. We can guess some of the effects; but we can guess in the case of genetic modifications as well. Sheer unpredictability cannot on its own justify our unease.

Against this it might be maintained that there is a different order of unpredictability involved in a form of parenting

fundamentally different from that with which we are familiar; thus we must compare, not this or that instance of traditional parenting with this or that exercise in baby-design, but rather the diverging *ranges* or *types* of predictability attending to two such different forms of parenting.¹ In formal terms this suggestion seems reasonable, but to be sustained it requires that we show just what this fundamental difference is and where it lies. If we are to concede the possibility of unforeseen biological consequences of a novel technique, then we must view all forms of genetic intervention or modification — be they enhancing or merely restorative or prophylactic — in the same sceptical light. We might indeed wish to adopt such scepticism; but notice that this does not bear intrinsically upon the *intentions* identified with the project of designer babies. The alternative is that there be a ‘type-difference’ of unpredictability attaching to the social dimension of parenting designer babies; but I see no reason to concede this, since the variables at stake are the psychological and behavioural vehicles of parental intent, and it strikes me that the present (and traditional) array of means to parenting offer us sufficiently bewildering variety already. It is hard to imagine how much further we could be surprised by the designs parents may have on their children.

4. Irreversibility of Effects

A related suggestion is that genetic modification is wrong because its effects are irreversible. But this suggestion is no more decisive than its predecessors. First, other kinds of interventions are just as irreversible — consider the effects of a choice of reproductive partner (including the choice of an egg or sperm donor). ‘Irreversibility’ does not name some special wrongness of genetic modification. Second, we might be sincerely glad if some changes were irreversible. If we could irreversibly eradicate the susceptibility to cancer, or for that matter a predisposition to uncontrolled aggression, I for one would be delighted. The intended force of the ‘irreversibility’ objection actually lies in the unspoken assumption that we are bound to be sorry about an irreversible change, *after* the event, because it will have unpredictable consequences. So this objection really falls back on its predecessor, and can be dealt with in the same way.

5. Our Lack of Control

A fifth worry might be that, if we cannot even predict the

consequences of genetic modification, still less can we control them. But I think we have already established that this is true of social modifications as well. Daily life is one endless testament to the uncontrollability of the longer-range consequences of our actions. Parenthood itself might almost be defined as an essay in uncontrollability.

6. Our Excess of Control

Precisely the opposite concern is that the wrongness of genetic interference includes the wrongness of exerting altogether too much control over other people, making them mere puppets or instruments of our will. It seems obvious that one could not rationally press both of these objections, yet they do feature in an oddly combined fashion in what we might dub the ‘Playing God’ objection (Napley, 1990), (an objection which is sufficiently distinct from the question of excessive control as to be worth separate consideration). At all events the ‘too much control’ objection is unconvincing. Our ability to control things is limited by the extent of our knowledge of the consequences of what we do, and this knowledge very limited. It is true that if, for instance, we ‘designed-in’ some gross characteristics such as infertility then we would have exerted some controlling constraints on the life of the unfortunate individual. However this shows only that certain *kinds* of genetic intervention are unacceptable — just as certain kinds of social intervention including racial discrimination, false imprisonment and slavery are unacceptable and punishable by law — and not that the idea of intervention *per se* is unacceptable, be it at the molecular or at the social level.

7. The Intolerance of Difference

A worrisome possibility is that children who are known to be the products of genetic design will be singled out by their more haphazardly-conceived peers for special identification and (rough) treatment — a form of victimisation and bullying reserved, in their case, for the ‘conceptionally different’.² Whilst this is a real risk, an objection based upon it can readily be answered in my view. For victimisation and discrimination will not be a new trick. Sadly it is already meted out to those whose *chance* inheritance makes them conspicuous, either by deficit or by surfeit in their physical or psychological characteristics; avoiding these deficits and surfeits is at least as plausible an aim of the design in ‘designer babies’, and — *pace* the point made above in response to objection number 6 — any wilful or reckless

intensification of a person's liability to victimisation should be condemned for what it is, howsoever it arises: in itself it does not indict the principle of genetic modification.

8. State-Sponsored Eugenics

An eighth possible reason for unease about genetic modification is that it will lead to State-sponsored eugenic policies: that is, the attempt on the part of a State to control the characteristics of its population by controlling their opportunities for successful reproduction. Now of course States can, and regularly do, abuse virtually any technological advance. But unless we want to return to life in the trees, there is little point in simply abandoning everything that is amenable to State abuse; the exceptions, perhaps, concern those things for which no decent constructive *use* is discernible. I would personally, albeit controversially, take nuclear weapons and gas chambers to belong together in this category, whereas the printed word does not (whatever the relative proportions of truth and lies in government publication). By the same token, neither do computers, aircraft or neuroleptic drugs — or, on the story so far, genetic modification.

The question of whether a technology will be abused in a particular State somewhat depends on the sort of State under discussion. It is worth reminding ourselves that not all States are alike, and not all are irredeemably vicious or oppressive. Within the last five years, after all, State-sponsored eugenic policies within the former Yugoslavia have been regarded by *other* States as a reason for prosecuting a war against the offending State. Moreover it is worth emphasising that those eugenic policies relied on bombs, bullets and rape rather than on the screening of embryos — that is, on social rather than molecular genetic interventions.

9. Eugenics Regardless of Sponsor

This suggests a ninth possible ground for unease — the idea that eugenic measures are bad whether or not the State is involved. Of course we then need to give reasons for believing that such measures *are* bad. Any plausible definition of eugenic measures would have to include the systematic intentional selection of reproductive partners within specified social constraints. Of course examples abound. Consider the constraints of race (which probably occur widely but have in modern times been enforced officially in, say, South Africa and unofficially in, say, the

southern United States); or consider the constraints of caste (think of India); or of religious affiliation (think of Ulster); or of inherited wealth (perhaps in all societies with vertical strata). An objection based on eugenics thus finds a rich variety of targets, amongst which the merely consumer form of 'baby design' occupies no special place.

Another, perhaps class-based, constraint on reproductive partners concerns the physical characteristics of beauty and fecundity, especially where these are meant to conform to the approval of a particular social group. (Hence, despite a generally class-based 'marriage habit' of the nobility, it was still possible for *female* beauty from the lower orders to be incorporated into the Norman and latterly the English ruling classes, for instance, but — for reasons of inheritance — male beauty or fertility could not so readily be annexed from the common people. On the other hand the constraints upon marriage habits could also be relaxed in the pursuit of ready cash (Perrott, 1968).) And as a final example, today it is at least arguable that genetic counselling constitutes a form of eugenic measure.

So unless all of these various measures are wrong — and that would have to be shown rigorously — we cannot condemn selective genetic modification on specifically eugenic grounds alone. We can of course control the 'medicalised' form of genetic modification more readily than we can control any of these other forms; but a readier opportunity does not itself constitute a justification.

10. The Pernicious Absence of Effort; or, 'Inauthenticity'

Now we come to a more subtle suggestion — that designer babies are arrived at *too easily*. Gone is the hard work of parenting for specific physical, intellectual or moral attainments: bringing up a child to develop a caring or nurturing disposition, to develop an ear for languages, to be musical, or a vegetarian, for instance. Gone too is the corresponding effort on the part of the child. Genetic engineering's child is fair of face and full of grace, and all for free! (At least, in terms of hard work; 'all for a fee' might be financially more accurate.)

Perhaps the objection may be put more compellingly as the charge that the benefits — if benefits they be — of life as, or with, a designer baby is that they are somehow *inauthentic*. They do not arise in the context of that

disciplined parental effort which, as Locke might have put it, is somehow 'mixed with' the soil of fertility (Locke, 1689); the benefits are not developed, elaborated, monitored and assimilated. And such parental effort is necessary, either for its own sake (a domestic expression of a somewhat Calvinist work-ethic) or for the avoidance of other, unnamed harms. This objection, particularly in the former of these two senses, is subtle at the cost perhaps of being elusive; it appears to produce unease rather than clarity. Analogy (albeit a treacherous guide) seems not to support it, in that there seems no intrinsic reason why we should not take advantage of labour-saving devices in the service of something defensibly regarded as a good: I take it that we would not condemn, say, a successful modern author for writing and revising at the word-processor rather than with quill and ink — any more than we would have begrudged General Custer a last-minute escape had a passing helicopter anachronistically appeared within hailing distance of his Last Stand. Once again we need something to make the objection robust and specific if it is to present a problem for genetic modification as such.

11. Threats to Personal Responsibility

Related to the complaint about having things too easy is the objection that genetic modification somehow undermines personal responsibility. It does seem true that socially-induced changes require more action from us than once-for-all changes at the molecular level, and therefore it might indeed be that too little responsibility is retained by those individuals (or commissioning couples) who put the execution of their choices in the hands of genetic engineers.

But of course this is only half of the matter — the other half concerns the weighty responsibility that goes with producing your baby design, and authorising the engineers to carry it out. After all, the *identity* of that responsibility, and perhaps even its extent, derives directly from the social importance of the results you expect to produce in your offspring. And consider this — if genetic modifications were routinely available, then you might be held responsible by society for *failing* to arrange for optimal design. Currently society shares your responsibility for educating, say, a stubbornly slow and under-achieving child. If the under-achievement could be attributed to a genetic oversight — a design fault — on your part, then society might expect you to foot the educational bill.

There is then after all a plausible link between genetic modification and personal responsibility; but it is one which seems to re-direct and even enlarge, rather than shrink, that responsibility.

12. Artificiality as Such; or, 'Playing God'

A number of the foregoing objections combine to resonate in a charge concerning the evils of artificiality *per se* — what in a more inflated form we might call the 'playing God' objection. The suggestion here is that in genetic modification of our offspring we are guilty of a conceit of Promethean proportions, meddling where we have no right to meddle, polluting the natural with the synthetic, usurping our own destiny and so on. On inspection the objection has a somewhat paradoxical air to it: it purports to show what happens when our reach exceeds our grasp, whereas in reality I think that the universal scope of the objection is its own nemesis. Fortunately we artificially interfere with 'the natural' all the time. To take only the most striking examples, illness and suffering are our embodied experiences of wholly natural events; medicine and surgery are artificial interventions in the natural course of organic processes. Again, ignorance is also plausibly a natural state, and one which Wilde's Lady Bracknell thought should be protected somewhat as an endangered species (Wilde, 1899); thankfully it normally succumbs to the artifices of culture and education.

Now, *if* it be right to cure disease, then it seems right to prevent its occurring, if necessary by means of interventions at the molecular level. By parity of reasoning, *if* it be right to try and overcome low educational achievement, or the social disadvantages of small stature, or obesity, why would it be wrong to attempt to assist or even achieve this at the molecular level?

13. Interference in Personal Identity

My final putative justification for moral unease about designer babies is perhaps philosophically the most difficult to sort out. It is the suggestion that in modifying someone's genetic endowment one modifies his or her identity in the process — if you like, changing not just what but actually *who* they are. This suggestion is substantial enough, and certainly difficult enough, to need close attention, so for the present I merely acknowledge it and we shall return to it towards the end of this discussion. It will be interesting to

see whether we can deal with it in quite the same (somewhat formulaic) way as that in which I believe we have disposed of the others.

Germ Line Modification — A Special Case?

So far we have considered and, I think, defused objections to modifications of the target individual — the offspring who is the focus of such studied parental intent. Now there seems to be general agreement, more or less consolidated in the Clothier Report, that research into *germ line* modification — that is, the genetic modification of reproductive cells — should be inhibited far more tightly than research into somatic gene ‘therapy’ — the genetic modification of cells forming the actual substance of the individual in question (Clothier, 1992). The assumption is that changes which it is acceptable to bring about in a single organism should nevertheless not be converted into enduring changes which will be inherited by that organism’s offspring, and so on. In effect, it is one thing to make designer babies, and quite another to make designer dynasties.

Once again I admit to sharing the general unease; once again I admit to being philosophically rather dissatisfied with the strength of the case on which my unease rests. This time I envisage fourteen rather than thirteen putative objections, but we may notice with relief that all but one of them are simple extensions of the thirteen we have already considered, and I believe that these can be dealt with at a single stroke.

Basically, we may suppose that if an intervention is considered unethical in the case of a single organism, the problem is magnified by being perpetuated through inheritance. So the thirteen objections we have already considered, all of which purport to give reasons for thinking the single case to be somehow improper, could instantly be extended to cover inherited change. But *mutatis mutandis* if the objections fail in the individual case, then their extensions seem liable to fail as well — or at least to stand in need of good reasons why they suddenly become cogent when applied to inherited characteristics. If there is a good reason, it is probably embodied in the additional, fourteenth, objection which I will consider in a moment.

Now I hope to have shown that at least eleven of the original thirteen objections *do* fail (the possible exceptions were

those concerning the identity of a genetically-modified child, and — just possibly, if strengthened — that concerning the ‘authenticity’ of too-easily obtained benefits). So the short cut answer is to presume that at least these eleven will fail in the extended case as well, unless there be some further, special feature of inherited change. If they are incapable of showing that a particular modification is improper in a single individual, they are I take it incapable of showing that it is improper to arrange for the individual not merely to possess but also to pass on a given modified characteristic.

Of the two exceptions, we shall consider the question of tampering with individual identity in conjunction with the only additional or new objection which *germ line* modification invites; I hope therefore that the questions of whether that objection supplies an objection either to somatic cell intervention or to *germ line* interventions can be decided at the same time. (The other exception, concerning the ‘authenticity’ of genetic benefits, provides an objection concerning which I myself remain in discomfort, in both the individual *and* the inherited cases; and I will conclude this discussion by attempting to dismiss it.)

The remaining, fourteenth, putative objection to *germ line* therapy involves attempting to show why a number of the previous thirteen might *suddenly* become powerful if applied against modifications which are to be perpetuated across generations, as follows:

14. ‘Fourth Party’ Interests

Basically the charge is that if designer babies involve tinkering with the ‘third party’ interests of the future child (albeit a perhaps unacceptably distanced way of referring to a central player in the drama³), *germ-line* therapy involves tinkering with what we might call ‘fourth party’ interests in the form of the progeny of the future child. And the reason *this* is important is that it seems to involve constraining the reproductive choices of the future child — something which, unlike the matter of education, for instance, we usually *do* think should be choices that the child should one day make for himself or herself.

This objection has wider scope than its predecessors but is no more successful. Once again it is shown to rely on the same old false contrast between a supposedly uniquely

controlled and constrained suppression of choice arising from genetic modification, and the supposedly uniquely free and unfettered choices available in society. And of course neither situation is plausible. Our children — howsoever produced — will inevitably find that their eventual reproductive choices are socially constrained by culture, class, perhaps ethnic group, opportunities and intellectual horizons, and so on. Moreover we as parents play our part in these constraints just by bearing and bringing up our children within them. To be sure, within (or despite) such constraints, our children will choose with as much freedom as they can muster. But the point is that so too will children whose general characteristics and situation reflect genetic modification — unless the modification was one which produced unresisting compliance with the instructions of others. And this, as we have already said, is precisely the sort of modification which can be condemned however it arises: genetically, chemically or socially.

This fourteenth objection then also fails, and in so doing it also fails to offer any support which might have strengthened one or more of the previous thirteen. So it seems that we have yet to find a convincing ground for any unease we might feel even about germ line modification *as such*.

There is moreover a further point, this time to be lodged in favour of the principle of germ line modification. Inevitably, in lodging it I am again taking advantage of what I see as the general continuity between the social and the genetic influences on the sorts of people we turn out to be. For do we not believe that some characteristics are so undesirable that it would be a good thing to eradicate them? Suppose we could utterly eradicate Huntington's chorea or cystic fibrosis by genetic modification on a global scale, would this be any different from eradicating smallpox by social measures? And consider also socially or morally disvalued conditions. If we could eradicate, e.g., psychopathy, or terrorism, or paedophilia by lawful and humane social means, what would be the objection to doing so? If we cannot think of convincing objections, why should we think it wrong to eradicate these things by genetic means, if we could do so? Would we perhaps wish to insist that the cure must take place in the same 'domain' as the disease, such that if paedophilia is a social menace it must be eradicated at the social level, i.e. by social exclusion and punishment? Such an insistence smacks curiously of the desire for

retribution. But preventing *future* occurrences of these evils of course removes the need for future retribution.

So my provisional conclusion is still that there are no clear rational grounds for our moral unease — about either somatic *or* germ-line genetic modification, about either designer babies or designer dynasties.

It seems to me that, before concluding, there remain two further substantial questions that we need to tackle. The first is this tricky question of our identity as individuals: are we anything more than the characteristics we happen to have? The second concerns our nature as human beings: are we anything more than our genes?

Are We No More Than Our Characteristics?

First, then, this matter of identity. Up to a point we might be tempted to think someone's identity consisted in her characteristics — consider 'a red-haired, talkative, cricket-playing, short-sighted, university-educated Labour-voting religious agnostic who has recently left the Royal Navy on psychological grounds for a career in agriculture,' for instance. Not a bad start — if we continue to generate the list of such characteristics we will pretty soon have fairly captured the identity of the woman in question. But is she *no more than* that list, however extended it be?

It is hard to say, perhaps — but it would be crucially important if instead she had been born with spina bifida. We, she, or all of us might wish to deny that her identity was reducible to a list that included being a sufferer from spina bifida. One sometimes hears the suggestion that ante-natal screening for irreparable congenital abnormalities is unethical because it devalues not merely certain conditions but also those who suffer from those conditions. This suggestion is, I hope, mistaken — but it does gain plausibility if we allow that disvalued characteristics are integral to someone's identity. And I suspect that we do have to allow this; indeed I have met seriously disabled or congenitally ill people who insist upon it. To take a notable example would seem hard to deny for instance that Professor Stephen Hawking's identity is in some way tied to his disabilities. His identity is of course tied also to the other things that he is, but his disabilities cannot be excluded.

There are a number of ways in which we might deal with this

matter. First we might say that until someone's genetic endowment has been expressed in their physical body — until they are literally and metaphorically conceived — there simply is no 'somebody' to alter. Designer babies are therefore not the victims of altered identity — they are the product of interventions from which an identity arises for the first time. So if designer babies have not been altered from as it were a previous model, the rightness or wrongness of altering someone's integral characteristics cannot arise.

Some people have suggested that those who are born sufficiently grievously disabled have a just cause against anyone who foresaw their situation before birth, and who avoidably neglected to prevent their birth and hence their life and its attendant suffering. Such suggestions turn up in law as the concepts of wrongful birth or even wrongful life. The worry for us might be that a corresponding notion, that of wrongful endowment, might be put forward as a just cause for grievance on the part of those who feel disadvantaged on account of congenital characteristics that were deliberately arranged by the baby designers.

The plausibility of such claims would seem to depend on the kinds of characteristics in question — my own father must have realised the probabilities that his hair problems would one day become my own, but few would take seriously my claims of wrongful genetic endowment on (at any rate) that account. Things might perhaps be different if an artificially modified endowment included very short stature (let us imagine the parents own a racehorse). And still more within the social as distinct from the biological domain, *given* individuals might resent receiving an endowment that emphasised musicality rather than motor skills, or for that matter the reverse. I think the point once again is that the rightness or wrongness of given endowments — which are important to given individuals' sense of identity — does not show that some previous identity has been wrongfully tampered with. Nor does it show that considerations of identity as such give special reason to regard the creation of designer babies as inherently wrong.

Are We No More Than Our Genes?

Finally I want to draw attention to what many will recognise as a philosophical mistake lurking at the core of many, perhaps most of the various objections that we have been considering. Indeed it is this point which, perhaps more

than any other, is what makes me *philosophically* dissatisfied with the general unease that I nonetheless persistently feel about the quest for designer babies. For the objections we have considered seem to me to take the whole business of designer babies rather too seriously — just as, I suspect, do the proponents of genetic modification. Obviously I do not mean, *morally* too seriously — it would be hard to do that. Rather, I mean that these objections neglect the crucial fact that we are more than our genes. Proponents and objectors alike seem liable to be making the unspoken assumption that our genes tell the whole story of our subsequent lives.⁴

The minute this assumption is spelled out, anyone can see that it is nonsense. The whole thrust of my responses to the dozen or so objections we earlier considered was to draw attention to the contributory, but still utterly *crucial*, importance of social and environmental influences on the people we turn out to be. To suppose otherwise would be to adopt the kind of crass reductionism which those who object to genetic modification would instantly scoff at elsewhere in science. It puzzles me that we are all so liable to it in the genetic context. Our genetic influences are vital, of course: to take a hackneyed example, they underwrite the capacity for language which all other primates lack and which virtually all human children possess. But the reasons that a child born and bred in France grows up speaking French and not Russian seem to be *exclusively* social.

Sometimes, individual genetic factors or complexes of factors might be more influential than social factors — this seems to depend on what somatic and behavioural characteristics we are talking about. The gene for cystic fibrosis needs no social context in order to show up in the individual; enormous social effort must be expended in coping with the results. But the gene for alcoholism — if one there be — *does* need a social context in order to show up. Without the social mechanisms that lead to the production, distribution, consumption and to an extent the regulated mystique of alcohol, there could be no alcoholics (Pickering, 1993). The same is true of the putative genetic predispositions to other socially-identified factors such as aberrant sexual orientation, criminality or aggression.

Conclusion

What does our sceptical review of objections to 'designer

babies' suggest with regard to the question: Designer babies — yes or no? Primarily, I think, that it all depends on what it is you want to design, and why, and whether a better route to your goal could be found by social means. I have not reviewed substantive or specific arguments in favour of the practice; moreover I have admitted to my temperamental unease with, or distaste for, the whole business; but it does seem that convincing rational objections are hard to find — at least, ones with any general scope.

That best-loved children's book, *The Wind in the Willows*, is in many ways the story of the trials and the redemption of its pompous central character, the outrageous proprietor of Toad Hall. Having charted the troubles and the grief which Toad's antics caused himself and others, the book concludes with his apparent transformation from errant prodigal to establishment pillar. 'He was indeed an altered Toad!', declaim the final pages (Grahame, 1926, p.247). An alteration greatly to be desired, wrought at tremendous — and avoidable — expense and effort, and all at the social level. What trouble would have been saved for the Riverbankers if Toad had been altered before the trouble all started, altered at the molecular level by some shrewd design changes on the part of that worthy animal, his father! (Kenneth Grahame seems not to have noticed, or perhaps been able to accept, that half of all biological parents are women.) But then without the struggles of Toad, Ratty, Mole and Badger, how dull Riverbank life would have been — perhaps, dare we say it, how inauthentic?

But of course it would not; for the (deliciously) irreconcilable hands dealt by Grahame to his protagonists are not reducible to their genetic inheritance — and moreover even if they *had* been thus reducible, any decently rich characters in literature or in life will, in combination, defy the constraints of inheritance and give rise to their own strong-brewed life: they will produce their own fully-authentic struggles and victories, adventures and misadventures, humour and languor, tedium and terror, on a scale appropriate to the canvas on which they are set.

What this shows, perhaps, is that the most striking feature of the 'designer baby' will be how limited the scope for design

really is, and that the consequence to be most feared from the actual production of entire kindergartens of 'designer babies' is the manifestation of parental disappointment — in proportion no doubt to the sums of money expended. But parental disappointment, itself a social as much as a biological phenomenon, is something that children have traditionally endured. I think it is unlikely that those with 'designer' origins will be at an especial loss as to how to cope.

Notes

1. I owe this point to one of the Journal's anonymous referees.
2. This point was made to me by Donald Evans in the context of objections to human cloning.
3. Again I am grateful to one of the Journal's anonymous referees for alerting me to the risk of neglecting the child's centrality at this point.
4. As I finish writing this, it is officially announced that there are only one-quarter as many genes in the genome as had been expected and that they are, after all, perhaps insufficiently numerous as to account for the complexity and variety of individual human lives (Highfield, 2001).

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