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Author(s): John O'Neill

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Future Generations: Present Harms

JOHN O'NEILL

There is a special problem with respect to our obligations to future generations which is that we can benefit or harm them but that they cannot benefit or harm us. Goodin summarizes the point well:

No analysis of intergenerational justice that is cast even vaguely in terms of reciprocity can hope to succeed. The reason is the one which Addison . . . puts into the mouth of an Old Fellow of College, who when he was pressed by the Society to come into something that might rebound to the good of their Successors, grew very peevish. 'We are always doing' says he, 'something for Posterity, but I would fain see Posterity do something for us'.¹

This assumption is largely shared by the protagonists in philosophical debates about our obligations to future generations.² It is an assumption which this paper will reject. I reject it not because I believe that we only have obligations to those who can benefit or harm us. I would defend no such position. I reject it rather because the assumption that future generations cannot benefit or harm us highlights a peculiarly modern attitude to our relation with the past and the future which is at the centre of our environmental problems. The assumption that future generations cannot benefit or harm us entails that we can do no harm or good to the generations of the past. It is tied to the modern loss of any sense of a community with generations outside of our own times—of any sense of reciprocal action or dialogue with them. The good of any generation is a purely local affair; it reaches only as far as those with whom we might have direct sympathies. If we have obligations to future generations they are obligations to strangers which are generated from a purely impersonal perspective.

This temporally local perspective on our goods is founded on a pervasive but mistaken view of what goods and harms can befall us—

¹ R. E. Goodin, *Protecting the Vulnerable* (Chicago: University of Chicago Press, 1985), 177.

² For another clear statement of this assumption see B. Barry 'Justice between Generations' in *Law Morality, and Society*, P. Hacker and J. Raz (eds) (Oxford: Clarendon Press, 1977). The classic account of the opposing view—that we can be harmed by events after our deaths—is found in Aristotle's discussion of Solon (Aristotle, *Nicomachean Ethics*, T. Irwin trans. (Indianapolis: Hackett, 1985) book 1, chs. 10–13).

that only that of which we are aware can harm us: what you do not know cannot hurt you. Hedonism provides the clearest example of this view: harm is what produces pain, a good what produces pleasure. Since on our death we lose consciousness, nothing can harm us. The greatest apparent harm or good that future generations can do to us is to our reputations. But a good reputation that cannot be enjoyed is of no value, and a bad reputation of which we are unaware is of no disvalue. Even amongst those who do not presuppose a hedonistic view of goods and harms and allow that posthumous damage to one's reputation is a harm, such damage is considered the only harm possible, and a minor one at that.³ While it is not true that future generations cannot harm us at all, there is little that they can do. These accounts of the goods and harms that can befall us are mistaken. I begin by providing *prima facie* examples that show that what happens after death can harm us — and not just via our reputations—and I highlight the relevance this has for the more general arguments about obligations to future generations.

I

William Rowan Hamilton is remembered in science for his early work on optics, which a century later was to prove central to the wave mechanics of quantum theory. (His achievement is recorded in the form of eponymy: 'Hamiltonian' is the term given to the mathematical function he developed.) This work was an early achievement in Hamilton's career—it was published when he was 23—and his later work, while of significance, does not have the reputation of his early work. This is not, however, what Hamilton thought of it at the time. He believed that his last mathematical discovery—quaternions—was to be a contribution to mathematics and the physical sciences of a status equivalent to that of Newton and Leibniz's development of calculus. It was to be his major contribution to the sciences. He wrote narratives about their discovery that befitted this projected status⁴: thus, for example, while in his initial accounts of the discovery, the basic equations of the system were simply jotted into a notebook, in later accounts they were literally carved in stone, on Brougham bridge in Dublin where in fact a future generation was to lay a commemorative stone. He spent the last twenty-two years of his life on the elaboration of his theory.

³ See for example B. Barry 'Justice between Generations' in *Law, Morality, and Society*, P. Hacker and J. Raz (eds) (Oxford: Clarendon Press, 1977).

⁴ See J. O'Neill *Six Presentations of a Mathematical Discovery* (Lancaster: Lancaster University, 1988) for discussion of these narratives.

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E. T. Bell's *Men of Mathematics* includes a chapter on Hamilton entitled 'An Irish tragedy', the tragedy being the waste of Hamilton's talents on quaternions:

Hamilton's deepest tragedy was . . . his obstinate belief that quaternions held the key to the mathematics of the physical universe. History has shown that Hamilton tragically deceived himself when he insisted ' . . . I still must assert that this discovery appears to me to be as important for the middle of the nineteenth century as the discovery of fluxions . . . was for the close of the seventeenth'. Never was a great mathematician so hopelessly wrong.⁵

The description of Hamilton's life as a tragedy may be overstated. Quaternion theory was not worthless. It played a significant role in the development of vector analysis.⁶ However, it is true that quaternions were not the achievement Hamilton thought they would be, and the development of vector analysis from the theory meant that certain features of it that Hamilton believed to be particularly important were put aside—a fact that led to a controversy between supporters of Hamilton's theory, notably Tait, and its 'opponents' Heaviside and Gibbs⁷ who developed vector analysis. Measured against the projected status that Hamilton had hoped for, his later work was a comparative failure. There is indeed something approaching tragedy about Hamilton's work on quaternions.

Or so it seemed until last year. A Chinese physicist, Li He, in a paper entitled 'Quaternions and the Paradoxes of Quantum Dynamics', resurrected quaternion theory and showed that the replacement of quaternions by vectors had disguised important assumptions in quantum theory. He demonstrated the usefulness of a development of quaternion theory along the lines that Hamilton had originally projected, and in particular showed the way in which quaternions allowed one to dispense with representations of vectors in terms of Cartesian coordinates. A sophisticated re-working of quaternion theory solves some of the basic paradoxes in quantum theory, and suggests quite new avenues of research. The importance of Li He's work has only recently been understood in the English-speaking world, and there is now talk of his being a potential winner of the Nobel Prize. More important from our point of view, it has meant a total reassessment of Hamilton's work. Far from constituting a tragedy, his later work on quaternions will be

⁵ E. T. Bell, *Men of Mathematics Vol II* (Harmondsworth: Penguin, 1953), 396.

⁶ See M. Crowe, *A History of Vector Analysis* (Indiana: Notre Dame University Press, 1963).

⁷ Ibid. ch. 6.

remembered in the terms Hamilton believed it would be, as one of the greatest achievements in the history of mathematics.

The last paragraph is total fiction. However, were it the case that it was true, then the reassessment of Hamilton's later life and work expressed in its last sentence would be a proper one: Li He's work would have transformed it from comparative failure to success. He would have done for Hamilton that which, from Hamilton's own perspective, would have been the greatest good he could have done for him. This is true despite the fact that Hamilton has been dead for over 125 years. This point can be made in terms of the different narratives that can be written about a life. In my discussion of Hamilton, three narratives have been outlined: the projected narrative that Hamilton assumed, the tragic narrative recounted by Bell, and my fictional narrative. Each tells a different story: Hamilton's own is a simple success story, Bell's one of tragic failure, and my own one of vindication of the individual after neglect and misunderstanding. Which story is true will also affect the way in which one tells of the lives of others involved. Thus a vindication of Hamilton might also be a vindication of Tait but a re-casting of Gibbs and Heaviside as individuals who *failed* to appreciate the import of Hamilton's work. Narratives do more than describe lives; they contain an evaluative component about how well those lives went, an evaluation which is visible only from the viewpoint of the end of the story. Only at the end can we determine the genre to which a life-story belongs—tragic, comic, heroic and so on. The point of my story about Hamilton is that a person's death may not be the end of their life-story. The proper end from which an evaluation is to be made may occur a century or more after the person died.

It is important to note that what is at stake in terms of which narrative is true is not just Hamilton's reputation. It is whether his later life was itself a success or a failure. Consider another possible story: an historian, Felix Taylor, has shown that Hamilton's early work on dynamics was not the work of Hamilton at all. It was the work of another mathematician, Robert Young, who died early in life unknown, and whose work was plagiarized by Hamilton. Felix Taylor's findings would do terrible damage to Hamilton's reputation as a mathematician and would do much good for that of Robert Young. If the findings were true, the changes in reputation would be quite proper. If they themselves were falsifications, they would constitute a slur on a dead man's name and character of a kind which is often, quite rightly, seen as worse than a slur on the name and character of the living: the dead cannot reply. Be that as it may, Taylor's work would be concerned *only* with reputation. It would not as such affect whether the person's life itself was a success or a failure. If 'Hamiltonians' had been the work of Robert Young, then Robert Young's short life would have been one of great

achievement. The question of reputation is one of whether or not that achievement is recognized, and not whether or not a work *is* an achievement.

The work of Li He would have had quite a different import for Hamilton's work. It would affect the degree to which the discovery of quaternions was an achievement at all. Thus, while Li He's paper would have an impact on Hamilton's reputation, it would do so indirectly, by rendering Hamilton's work itself a success, and hence something for which recognition is called. Reputation as a good is parasitic on other goods, the achievement of which is such that they deserve recognition. Where Taylor's work would affect who deserves recognition, Li He's work affects the existence of the good for which recognition is deserved.

Consider now another possible story concerning the fate of Hamilton's work—one which we know to be false. Shortly after Hamilton's death, a fundamentalist religious movement swept the globe, according to which all science and mathematics was a sin of human pride against God, and the cause of Man's fall. A second inquisition against scientists was instigated and scientists were forced to recant their work. All scientific works were burnt, the word of God being the only word allowed to be taught. The movement was a total success with the result that science and mathematics were lost to human kind for all time. What would be the consequences of this subsequent history for Hamilton's work? One possible answer is that it would have no consequences; the work of the nineteenth-century mathematicians was an achievement, whether or not it was subsequently recognized as such. While this answer is attractive, it is not completely satisfactory. For, as just noted in contrasting the impact of our fictional characters Taylor and Li He, it is not just *recognition* that depends on the actions of future generations, but also the question as to whether or not a work actually *is* an achievement.

The status of scientific works depends on their relation to both a particular past and a particular future. In relation to the past, a piece of scientific work only makes sense within a particular history of problems and theories to which it makes a contribution. Its success or failure depends on its capacity to solve existing problems where others fail. However, it also depends on a projected relation to the future in terms of its capacity to solve not just existing problems, but also problems unenvisaged by its author, and in its fruitfulness in creating new problems to be solved and new avenues of research. A scientific result exists in relation to a possible future in terms of which it is rendered a success or failure. My fictional religious movement robs all scientific work of that future by making the potential success or failure of theories unavailable. The consequence is not that all scientific work is a failure,

but rather that the possibility of both future failure and success disappears. That possibility depends on the existence of generations competent to judge and develop a theory.

The claims which I have defended here concerning the role that future generations can have in determining the success or failure of the work of previous generations are not only true of scientific work. They are also true of other activities and apply to other intellectual disciplines. Thus it has been said of Aristotle that his greatness lies in his interpreters. The continual discussion of his work, the discovery of new arguments and the development of new interpretations in the context of new problems and intellectual climates is the source of Aristotle's success. For example, without Aquinas, Aristotle would be a lesser figure than he is. The same points apply in the arts; the greatness of many works of art lies in their continuing to illuminate human problems and predicaments in contexts quite foreign to that in which they were originally constructed. Likewise, many of the aesthetic qualities of a work of art may only become apparent in virtue of its relation to other works. In that minimal sense, Eliot's comment is right that 'the past should be altered by the present as much as the present is directed by the past'.⁸ For this reason, if the arts were robbed of a future by the production of generations unable to appreciate them and contribute to them, they would to that extent be robbed of the conditions for success or failure.

Similar points apply to more 'prosaic' activities. They apply, for example, to politics. The success or failure of major political projects normally becomes apparent only well after the political actors have ceased to be active. Witness that of the Bolsheviks in contemporary Eastern Europe. They apply also to everyday working activities, where these involve skilled performance. It is true, for example, of crafts. Consider the hedgerows of Britain: these are the product of the skilled work of labourers that stretches back for centuries. If a succeeding generation with no sense of the skill embodied in the hedgerows and no appreciation of their value destroys them as mere impediments to more profitable agriculture, then that generation harms not only itself but also the past. The disappearance of the hedgerows is more than 'just' an act of environmental vandalism. This is not to say that respect for past generations and a desire to do well by them entails that we leave all embodiments of their activities untouched. It does mean, however, that such concerns should form an important component of our practical deliberations.

I finish my story-telling by giving a twist to my last tale about the fate of Hamilton's work. Imagine that the religious movement so destruc-

⁸ T. S. Eliot 'Tradition and the Individual Talent' (1919) in *Selected Essays* (London, 1951), 15.

tive to science was largely an outcome of the Romantic movement of which Hamilton was a part. After his death, many in Hamilton's romantic circle were among the first to denounce the sins of science, and his Romantically inclined scientific acquaintances among the first to recant their own work. Hamilton's own romantic views were a source of attacks on liberal enlightenment thought, and his name was often referred to in such cases. Let us also suppose that Hamilton was aware of the possible anti-scientific import of his romantic views. If this story were true, then there would be a sense in which Hamilton had failed himself. In so far as he was responsible, through his influence on this religious movement, for the appearance of future generations incapable of understanding the worth of his work and pursuing mathematical work consequent on it, then he also undermined the possibility of success for his own work.

The same point can be made in a less artificial manner by a consideration of the value of education. Education is a good not just for the pupil but also for the educators—it is through the education of succeeding generations that one establishes not only an audience for one's work, but also participants in the same enterprise who are able to render it a possible success. Hence, to fail to educate succeeding generations is not only to damage them, it is also to damage oneself.

These final points have particular relevance to our relations to future generations. Future generations can benefit or harm us: the success or failure of our lives depends on them for it is they that are able to bring to fruition our projects. Our failures with respect to them can be of two kinds.

(1) We can fail to produce works or perform actions which are achievements. Future generations may not be able to bring our deeds to a successful fruition.

(2) We can fail to produce generations capable of appreciating what is an achievement or contributing to its success. This tends to be ignored by those discussing future generations.⁹ Thus Golding asks 'what obligations do we have to future generations since they may not belong to our normal community?'¹⁰ and answers that we have none. Others have responded that we do have duties to strangers, whatever their nature, appealing either to utilitarian considerations,¹¹ to impersonal

⁹ A notable exception is M. Sagoff *The Economy of the Earth* (Cambridge University Press, 1988), 60–65.

¹⁰ M. Golding, 'Obligations to Future Generations', *The Monist*, **56**, 1972, 85–99.

¹¹ See for example R. Sikora 'Is it wrong to prevent the existence of future generations' in *Obligations to Future Generations*, R. Sikora and B. Barry (eds) (Philadelphia: Temple University Press, 1978) and R. Attfield *The Ethics of Environmental Concern* (Oxford: Blackwell, 1983) chs. 6 and 7.

principles of justice,¹² or to intuition.¹³ Both sides fail to acknowledge that our primary responsibility is to attempt, as far as it is possible, to ensure that future generations do belong to a community with ourselves, that they are capable, for example, of appreciating works of science and art, the goods of the non-human environment, and the worth of the embodiments of human skills, and are capable of contributing to these goods. This is an obligation not only to future generations, but also to those of the past, so that their achievements continue to be both appreciated and extended; and to the present—ourselves—so that we do not, like my final mythical Hamilton, undermine our own achievements by rendering impossible our own success.

Thus it might be that the products of modern society will be mindless consumers, with no interest in knowledge of the natural world, little concern for the quality of the lives of those contemporaneous with them, no sense of what it is for public life to thrive, no concern with the natural environment in which they live, no taste for the arts or understanding of the fundamental sciences beyond a pragmatic concern for successful techniques. The nightmares of science fiction might come to pass. If that were to be the case, then, to the extent that the current generation was responsible for it, that generation would have failed not only the future but also itself and the past. Our obligations to future generations are obligations both to those of the past and to those of the present.

A number of qualifications and points of clarification need to be made to the position I have thus far developed. Consider the phrase 'a community with ourselves' which I used earlier. This notion disguises differences within any generation of value and interest; such differences entail that what counts as an achievement or a success in the lives and work of those in the past is often contested—consider, for example, the differing status one might accord to the theoretical works of Locke, Hegel, Mill or Marx, or to the political actions of Cromwell, Jefferson, Luxemburg, Lenin, and Mao. Examples drawn from the history of science, like that of Hamilton, can be misleading in this regard, for there is a high degree of consensus concerning the achievement of the past within the scientific sphere which is absent in others, particularly the political and social. Differences in values and interests among the present generation affect not only the past, but also more clearly the future. Such conflicts are associated with conflicting aspira-

¹² Revised versions of Rawlsian principles are particularly popular: see for example D. Richards, *A Theory of Reasons for Action* (Oxford: Clarendon Press. 1971) and Barry *op. cit.*

¹³ R. and V. Routley 'Nuclear Energy and Obligations to the Future' *Inquiry*, 21, 1978, 133–179.

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tions for the future and hence, indirectly, with the kinds of people that will inhabit the future. It is not, then, a question of passing on a 'shared set of values' to future generations, but rather an ongoing argument concerning what those values are to be and, within the political domain, what kind of society those generations will inhabit. This is not, of course, to say that historical outcomes decide correctness in such conflicts—barbarism is always a possible outcome.

It is not only within generations that values conflict, but also across generations. The works and actions of one generation are subject to the critical scrutiny of the later, and also the values that inform such works. Again, examples from science can be misleading; claims concerning paradigm shifts notwithstanding, there has been a remarkable continuity in scientific values over the past three centuries, a point Kuhn himself concedes.¹⁴ In other spheres, value discontinuity over time is more pronounced, and the re-assessment of earlier works is often consequent on such changes. Within the political context, consider the changing views of the Bolshevik revolution within this century; within the ethical context, the resuscitation of the Stoics in the new paganism of the Enlightenment¹⁵; within a literary context, the reassessment of the Metaphysical poets in this century by T. S. Eliot and others.¹⁶ Present, future and past are linked, then, not by some single set of values which the present passes from past to future, but by arguments both within generations and between them. The conservative image of a quiet and contented continuity of past, present and future needs to be rejected.¹⁷

II

The view defended in the last section—that future generations can harm us, and that we can harm ourselves in virtue of the kind of future we bring into being—presupposes the rejection of a subjectivist account of human well-being. For the subjectivist, well-being or happiness consists in having particular psychological states such as pleasure or feelings of satisfaction.¹⁸ Hence, since our deaths end our mental

¹⁴ T. Kuhn 'Objectivity, Value Judgement and Theory Choice' in *The Essential Tension* (Chicago University Press, 1977).

¹⁵ See Peter Gay *The Enlightenment* (London: Weidenfeld, 1967).

¹⁶ T. S. Eliot 'The Metaphysical Poets' in *Selected Essays, 1917–1932* (New York: Harcourt Brace, 1932).

¹⁷ See M. Oakeshott, *Rationalism in Politics* (London: Methuen, 1962) for a modern presentation of that view.

¹⁸ By 'a subjectivist theory of well-being' I mean here the view that well-being consists in having certain psychological states. There are other senses of

states, nothing can harm us after our deaths.¹⁹ The hedonistic account of happiness provides the clearest example of this perspective.

The subjectivist allows of no distinction between a life that feels good and a life that is good. However, the failure to make such a distinction leads to incoherence. Consider again my example of Hamilton's life, and assume that it had become apparent during his lifetime that quaternions were not likely to be the achievement that he had thought, and that this was evident to other mathematicians. Hamilton's beliefs were, we may suppose with E. T. Bell, delusions. As long as he maintained his self-deception, Hamilton might have felt good, but whether his life was good is a different matter. Let us assume that at the end of his life he realized that quaternions were not likely to be the success he had believed them to be. He would have experienced great disappointment. For the subjectivist, this is bad because for Hamilton it *feels* bad. But this gets everything the wrong way around, for Hamilton feels bad because he recognizes that his life itself is not a success.²⁰ The disappointment is parasitic on the objective failure of his project. The subjectivist can make no sense of this emotion since, in the absence of the emotion, there is nothing wrong.

A similar point can be made with regard to reputation. What is good for an individual about a good reputation? For the subjectivist, it can only consist in its feeling good. However, this fails to appreciate the way in which concepts such as reputation and honour are parasitic on objective goods. Reputation and honour are goods only in so far as they involve recognition by others who are believed competent to judge the goods which an individual has achieved. Individuals seek then to confirm the worth of their own achievements. Hence, it does not make sense to seek reputation and honour as an end in itself. To receive honour and recognition from those one does not believe able to judge competently the worth of an achievement is self-defeating.²¹ Thus, one feels good in achieving recognition by others competent to judge the

¹⁹ See Epicurus 'Letter to Menoeceus' in C. Bailey *Epicurus, the Extant Remains* (Oxford: Clarendon Press, 1926) and Lucretius *On Nature*, R. Geer (trans.) (Indianapolis: Bobbs-Merill, 1965) Book 3, 830–1094 for the classical statement of this view.

²⁰ Cf. T. Nagel 'Death' in *Mortal Questions* (Cambridge University Press, 1979).

²¹ See Aristotle, *Nicomachean Ethics*, 1095b 26–30 and 1159a 14–25.

the phrase which need to be distinguished from this one and which are not my concern here. For a recent unpicking of different senses see A. Wood, *Hegel's Ethical Thought* (Cambridge University Press, 1990). See also J. Griffin, *Well-Being* (Oxford: Clarendon Press, 1989) part one, R. Kraut 'Two Conceptions of Happiness' *The Philosophical Review*, 88, 1979, and D. Parfit *Reasons and Persons* (Oxford: Clarendon Press, 1984) Appendix I.

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worth of one's work because it confirms the independent worth of the work. Subjectivism, since it has no place for objective goods, fails to make sense of the good of reputation. It can make no sense of the distinction between reputation and fame, honour and status.

If reputation is a good simply because it feels good, then posthumous reputation makes no sense at all. If, on the other hand, honour is a good in virtue of its reflecting an objective good, then it does. It was this perception of honour that informed the classical concern with the future. In the classical world, each generation looked to the future for its continuity. Thus when Herodotus begins his history by stating that his aim is 'to preserve the memory of the past by putting on record the astonishing achievements both of our own and of Asiatic peoples'²², those whom he primarily means to benefit are those whose memory he perpetuates. Their success depends on such memories since through them they are immortalized. As Augustine puts the classical view he himself in part rejected:

what else was there for them to love, but glory? For, through glory, they desired to have a kind of life after death on the lips of those who praised them.²³

Significantly, that desire for posthumous honour was rejected by the Epicureans on the ground that it was unnecessary since it led to no pain when it remained ungratified.²⁴ Given a subjectivist theory of well-being, such desires no longer make sense and ought to be eliminated.

A subjectivist theory of well-being undermines our ties to the future, for it fails to allow that the success of our own lives is tied to those of the future, just as the good of those of the past is in our own hands. If the only thing that is good for us is particular mental states, then there is no perspective from which to defend obligations to future generations, except an impersonal perspective. One is forced to treat the problem of future generations as a concern for strangers whose own goods are not bound up with our own. Each generation is isolated into itself.

III

Recent philosophical arguments about future generations are symptomatic of a temporal myopia that infects modern society. The question of obligations to future generations is posed in terms of abstract obliga-

²² Herodotus, *The Histories*, A. de Selincourt (trans.) (Harmondsworth: Penguin, 1954) 13

²³ Augustine, *City of God*, H. Bettenson (trans.) (Harmondsworth: Penguin, 1976) Book V, ch. xiv, 204.

²⁴ See the scholium on Epicurus, *Principal Doctrines* xxix in C. Bailey op. cit., 367–368.

tion to possible future people who are strangers to us. The argument is premised on the lack of a sense of continuity of the present with both past and future. There is little sense in which our projects, and interests in the success of such projects, are understood as tied to the future. What is the source of that myopia?

One way to begin to answer that question is by noting that the problem of our obligations to future generations can be stated as a version of Hardin's mis-characterized 'tragedy of the commons'.²⁵ Hardin's tragedy is mis-characterized in that it highlights a problem not of common ownership of a resource, but of no ownership at all. The problem of the commons is one of open access in a context of private ownership of particular assets. In its original form the tragedy is as follows:

A pasture is open to a number of herdsmen, each one of whom acts in isolation from the others and attempts to maximize his own utility. Each considers the utility to himself of adding another animal to his herd. For any individual, the positive benefit of adding another animal to the herd will be greater than the loss from overgrazing, since the benefit accrues entirely to the individual, while the loss is shared among all the herders. Hence, a set of rational, self-maximizing herdsmen will increase their herds even though collectively it is to the detriment of all.

With respect to the earth, successive generations occupy a temporal 'commons'. This is true even given complete private ownership of resources. To re-use Hardin's example, consider a plot of land owned by successive generations of herders. Each generation, if they are rational self-maximizers, will add to their herd and graze the land to its limits within that generation; the benefit accrues to themselves, while the loss is shared by all successive generations. Hence, given Hardin's logic, we should expect each generation to deplete the resources it passes on to following generations.

What is the solution to this temporal tragedy? One possibility that is not open is the standard solution that is offered to the original spatial tragedy of the commons, which is to place the 'commons' under private ownership. As I have just noted, the result occurs even given private ownership within each generation. However, an answer to the problem can be achieved if we re-cast the question: why is it the case that successive generations did not knowingly deplete resources until recently? Indeed, why did they improve it, even given that they knew they would not reap the benefits?

The answer is that, until recently, for successive generations, their identity and the projects through which they expressed their identity

²⁵ G. Hardin 'The Tragedy of the Commons' in *Managing the Commons*, G. Hardin & J. Baden (eds) (San Francisco: Wm. Freeman, 1977).

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spread over time. They did so, ironically, because land *across* generations was seen as the *common* property of particular families or communities. Thus land was owned by a family over many generations, or held in common by a community with a stable set of families over generations. Each generation had a sense of identity over time with future owners. They understood themselves to be members of a collective with continuity over time, and saw their own interests as bound up with those of future members of that collective. They engaged in projects the success of which relied on successive generations. Consider tree planting, for example. As a project it is tied to the future in two ways: it will benefit individuals living in a future generation, but to do so successfully it requires the co-operation of another, intermediate, generation. One's concern with the future entails projects whose success depends on the future. Individuals of different generations did not see each other as temporally local actors; rather, their interests and projects were seen as inextricably tied to those of other generations. In Mediaeval Europe, the family and village community were sources of a sense of identity that spread across time.

In modern society such continuity is missing. In contrast with the past, the present generation acts on the land in terms of a temporally local horizon without a sense of identity or projects spread over time. It engages knowingly in resource depletion. This is most evident in the fate of topsoil, one third of which has now been removed from the world's agricultural areas. The present generation does indeed appear to act like Hardin's rational self-maximizing herder, concerned for immediate high returns from the land. Why is this? The answer lies partly in the immediate economic pressures that the market places on use of the land. Even given a sense of identity over time, it is difficult to express that identity when in order to survive in the market place each must maximize her current returns from the land even at the cost of its long-term deterioration.²⁶

More significantly, the market also undermines the existence of an identity across generations. On the land, two developments have relevance to the decline in continuity across time. One is the replacement of family ownership of the land by corporate ownership. Modern corporations have no concerns with identity across time. The second is the advent of mobility in ownership of land, which entails that on non-

²⁶ Within the third world a more direct force causes peasants to be unable to express any intergenerational identity, i.e. poverty. If one does *not* graze one's land to the limits there will be no future for one's kin. Hence, even when one recognizes the effects of environmentally insensitive practices, one has no alternative. The continuing existence of those whom one wants to benefit requires such practices.

corporately owned land the family as an intergenerational owner of the land often no longer exists. Hence there is no sense of a tie to future owners of the land. Indeed, this point was at the heart of the debates about land and commerce in Britain in the seventeenth and eighteenth centuries. Thus, for example, the eighteenth century civic humanist criticism of commercial society was founded on the belief that the civic virtues had their basis in stable ownership of landed property.²⁷ The material foundation of a good society lay in 'real property recognizable as stable enough to link successive generations in social relationships belonging to, or founded in, the order of nature'.²⁸ Commercial society, by mobilizing land, undermined that link between generations.

The relation between the market and the mobilization of land points to another feature of market economies that is at the basis of the modern shrinking of identity across time. It is not just the mobilization of landed property by the market that undermines intergenerational identity, but also the mobilization of labour. Specific ties to a particular locality and place, to a stable extended family within a locality, and commitments to a particular craft and profession are inimical to and undermined by the workings of a market society. On the one hand, workers in a market society must be prepared to shift location and occupation if they are to achieve the market price for their labour—hence the element of truth in von Mises' claim that low wages and unemployment are the consequences of the acts of those who refuse to change their profession and place of work.²⁹ On the other hand, the 'efficiency' of the market requires that individuals be thus mobile. Mobility of labour is built into the concept of 'the perfectly competitive market' central to arguments for the efficiency of the market in modern welfare economics. The advocacy of the mobility of labour has been central to the defence of the market economy, from Smith's strictures against guilds and corporations to recent objections to professions and trade unions.³⁰ This mobilization conflicts with a self whose identity is

²⁷ See J. Pocock, *The Machiavellian Moment* (Princeton University Press, 1975) chs. 13 & 14, and 'The Mobility of Property and the Rise of Eighteenth-Century Sociology' in *Virtue, Commerce, and History* (Cambridge University Press, 1985).

²⁸ J. Pocock, *The Machiavellian Moment* 458.

²⁹ Von Mises, *Socialism* (London: Jonathan Cape, 1951) 62 and *Human Action* (London: William Hodge, 1949) 595–598 and 620–624. My arguments here owe much to K. Polanyi, *The Great Transformation* (Boston: Beacon Press, 1957) chs. 14–15.

³⁰ For Smith's view see A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Oxford: Clarendon, 1976), especially book I, ch.10, part 2. See R. Poole *Morality and Modernity* (London: Routledge, 1991) ch. 1 for a discussion relevant to the present arguments.

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constituted by relations to place, kin and occupation. A consequence is the lack of a sense of identity that extends across generations in modern society.

Consider ties of place. A humanized environment contains within it the presence of those generations who created the land.³¹ To have a tie to a place is to have a tie with an environment which reveals a particular past history. It is to recognize the skills embodied in dry stone walls, hedgerows and buildings and to have a sense of continuity with those whose skills are thus made public. Hence, to disrupt ties to place is not merely to remove persons from a particular spatial location, but also to divorce them from relations to previous generations. Similar points apply to relationships of kinship. The contraction of the family in the modern world has a temporal dimension: a relationship like that of being a second cousin, or even a cousin, means less in part because generational continuity and the common sources that constitute such relations are themselves of less significance. Ties to the past and future tend to be limited to two or at best three generations in either direction. Finally, with respect to occupation, ties across generations have also been weakened by the disappearance of continuity in craft and work.³² If a craft does persist today, it is likely to do so outside of any history and in the context of the production of tourist bric-a-brac. The relation of master-journeyman and apprentice has been lost, and with it the sense in which success in craft work was tied to past and future. As Weil notes:

A corporation, or guild, was a link between the dead, the living and those yet unborn, within the framework of a certain specified occupation. There is nothing today which can be said to exist, however remotely, for the carrying out of such a function.³³

³¹ See R. Dubos *The Wooing of the Earth* (London: Athlone Press, 1980) ch. 7.

³² While intellectual disciplines like those of science still provide examples of the way in which the success of one generation depends on future generations—hence the use of scientific examples to make my case—it is nevertheless becoming a commonplace that a sense of history within intellectual disciplines is being lost. Within the sciences, this is a consequence not only of increasing commercial pressures (J. O'Neill 'Property in Science and the Market', *The Monist*, 73, 1990, 601–620), but also to what Husserl calls the technisation of the sciences, their reduction to formalized disciplines which require technical virtuosity rather than their being disciplines which aim at true descriptions of reality requiring reason. I discuss this in detail in J. O'Neill, *Worlds Without Content: Against Formalism* (London: Routledge, 1991).

³³ S. Weil, *The Need for Roots* (London: Routledge and Kegan Paul, 1952) 96.

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The mobilization of labour by the market, like the mobilization of land, has undermined a sense of community across generations. Both lie at the basis of the temporal myopia of modern society.

To make these points is not to advocate a return to stable ownership of the land and limited mobility in labour. The particular ties of pre-modern societies were often oppressive, and the dissolution of old identities a liberation from personal servitude and narrow horizons.³⁴ Moreover, even if it were desirable to limit mobility, in modern conditions it would not be practicable without excessive coercion. However, to highlight the sources of the temporal myopia of modern society is to point to the need for forms of community that allow an extension of our sense of identity over time, something like that which the older family and community ties provided. This parallel between the possibility of general community across time and that previously provided by the family is exploited by Marx:

a whole society, a nation, or even all simultaneously existing societies taken together, are not the owners of the globe. They are only its possessors, its usufructuaries, and, like *boni patres familias*, they must hand it down to succeeding generations in an improved condition.³⁵

Such a sense of identity both requires and would encourage participation in those projects the success of which requires co-operation across generations. Success in our own lives needs to be clearly bound up with those of future generations. The problem of obligations to future generations is a social and political problem concerning the economic, social and cultural conditions for the existence and expression of identity that extends across generations. At the heart of that issue is the problem which has been the focus of much social and political theory for the last two centuries—that of developing forms of community which no longer leave the individual stripped of particular ties to others, which are compatible both with the sense of individual autonomy and with the richness of needs that the disintegration of older identities also produced.

The current environmental crisis has made this problem more pressing. Paradoxically, however, it might also reinforce the narrow time-horizon of moderns. The doomsday predictions of environmentalists

³⁴ While Marx criticizes the market, he recognizes the way it has thus liberated individuals. See, for example, K. Marx, *Grundrisse* (Harmondsworth: Penguin, 1973) 156–165. This feature of modern society tends to be underplayed in recent communitarianism, particularly in MacIntyre's work (A. MacIntyre, *After Virtue*, 2nd edn. (London: Duckworth, 1985)).

³⁵ K. Marx, *Capital Vol. III* (London: Lawrence & Wishart, 1972) 776.

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can encourage a sense that we are already within the final generations. Ecological fear without a sense of the possibility of change can induce an image of our approach to an end after which there is no future. The confidence in long term projects across generations which informed pre-modern societies was based on a feeling of certainty that such generations would exist, a feeling only punctuated by outbreaks of millenarianism. The ecological crisis may induce a secular millenarianism which threatens to undermine the very sense of a relation to the future which is needed if that future is to exist.³⁶

University of Sussex

³⁶ An earlier version of this paper was read to the philosophy departments at Bristol University and Lancaster University—my thanks to those who commented on those occasions. I also wish to thank Andrew Collier, Roger Crisp and Yvette Solomon for their comments.