Scientific Imperialism and the Proper Relations between the Sciences

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John Dupré argues that ‘scientific imperialism’ can result in ‘misguided’ science being considered acceptable. ‘Misguided’ is an explicitly normative term and the use of the pejorative ‘imperialistic’ is implicitly normative. However, Dupré has not justified the normative dimension of his critique. We identify two ways in which it might be justified. It might be justified if colonisation prevents a discipline from progressing in ways that it might otherwise progress. It might also be justified if colonisation prevents the expression of important values in the colonised discipline. This second concern seems most pressing in the human sciences.

1. Introduction

According to John Dupré (1996, 2001), we should be concerned about the occurrence of imperialistic relations between different scientific disciplines, which, in his words, constitute ‘an intellectual disorder’ (2001, 74). Dupré’s (2001) account of ‘scientific imperialism’ builds on an analogy with political imperialism. Just as political imperialists attempt to dominate other population groups, scientific imperialists attempt to dominate other scientific disciplines and sub-disciplines. His chief examples of imperialism concern the grand explanatory ambitions of economists and evolutionary psychologists. Key figures in both groups have advanced explanations which attempt to account for all aspects of human behaviour. In doing so they attempt to subsume sociology, anthropology, political science, and various other disciplines within their respective explanatory empires. His work raises important issues about the proper relationship between the sciences and, more generally, between intellectual disciplines.
The term ‘scientific imperialism’ is sometimes used as a synonym for ‘scientism’, the naïve view that all of our decisions can and should be made scientifically. Indeed, it is used this way by Staddon (2004). ‘Scientific imperialism’ is also sometimes used to refer to the practice of conducting clinical trials in underdeveloped nations, as a response to costs and as a response to the difficulty of obtaining ethical approval for them in the West (Wilmhurst 1997). And perhaps there are further uses of the term that we are unaware of. Here we attempt to explicate the sense in which the term is used by Dupré, and we attempt to identify the normative content of his critique of scientific imperialism.

In opposing ‘scientific imperialism’ Dupré is joined by another philosopher of science, Nancy Cartwright, who complains about the imperialism of quantum mechanics within physics, and of the ‘imperialistic tendencies’ of physics in general and of economics. According to her, physics ‘aspires to account for almost everything … in the natural world’. And economics attempts to explain ‘almost everything’ in the social world (Cartwright 1999, 1). However, Cartwright’s comments are asides and do not constitute a case against scientific imperialism. The main work that has been done in articulating this case is due to Dupré.

Dupré and Cartwright’s opposition to instances of the utilisation of explanations in one discipline, which are derived from a different discipline, is shared by other scholars. For example, Gary Becker’s (1991) attempt to utilise economic theory to account for family dynamics, has met fierce resistance from Radin (1996) and Adler (1998). They argue that cost-benefit analysis, ubiquitous and paradigmatic in economics, is inappropriate in other social sciences, where it can only lead to a failure to account for aspects of human behaviour that are not motivated by economic considerations.

Not every attempt to reapply explanations developed in one domain, to other domains of thought counts as scientific imperialism, according to Dupré. Scientific imperialism is a matter of degree. For Dupré, scientific imperialism is ‘… the tendency to push a good scientific idea far beyond the domain in which it was originally introduced and often far beyond the domain in which it can provide much illumination’ (Dupré 2001, 74). Idle attempts to explain a phenomenon using unexpected intellectual resources might seem harmless enough, and some may be. According to Dupré, what is pernicious is a tendency of colonising sciences to do more than provide a source of fruitful ideas to other sciences. In a discussion of imperialism in economics he tells us that, ‘typical imperialists do not merely establish embassies in foreign countries and offer advice to indigenous populations. And, similarly, economic imperialists do not merely export a few tentative hypotheses into the fields they invade, but introduce an entire methodology that is in many cases almost entirely inappropriate’ (Dupré 2001, 128). What are we to make of this claim that it is inappropriate? How might we cash it out?

Dupré is a prominent opponent of reductionism (Dupré 1993a, 85–167) and it might be supposed that his opposition to scientific imperialism amounts to no more than his opposition to reductionism. But this would be misleading. Reducing the explanatory structures or entities of one science to another science is one way in which an imperialist might attempt a take over of another discipline, but it is only one way. Eliminating rather than reducing the explanatory structures or entities of another
discipline may be an equally effective way in which an imperialistic science can colonize that other disciple. Dupré’s concerns about scientific imperialism also encompass a concern about the dangers of ‘horizontal unification’. Horizontal unification occurs when one discipline is unduly influenced by another, despite not being ‘vertically’ subsumed within that discipline by the use of either reduction or elimination. The most obvious instances of horizontal expansion occur when the methods and techniques of one science begin to be adopted in another science. This can lead to complete horizontal unification. Again, this is a concern that goes beyond concern about the attempted reduction of one science to another.

In addition to opposing reductionism and scientific imperialism, Dupré (1993a, 2001) is a well-known opponent of the unity of science movement of the mid-twentieth century and it could perhaps be supposed that the case against scientific imperialism is synonymous with opposition to the unification of the sciences. But Dupré (2001) is not opposed to all forms of unification in the sciences and, as we will go on to see, the case against scientific imperialism is more specific than a general case against unification in science.

Against earlier logical empiricist unifiers, Dupré (1993a, 2001), Hacking (1996), Wylie (1999) and others emphasise the methodological disunity of contemporary science and the lack of reason to think that science will ever become unified. It might be thought that, even if the case against scientific imperialism is not synonymous with a case against unification of the sciences, the case against scientific imperialism could be grounded straightforwardly on the case for the methodological disunity of science. However, we think that this would be an inadequate basis for the case against scientific imperialism. We have two reasons to hold this view.

First, if we hold that science is methodologically pluralist then it seems that we are not in a position simply to reject the use of particular methods in any particular scientific disciplines. It seems that we should be tolerant of multiple methods in particular scientific disciplines. But opponents of scientific imperialism argue that particular methods should be discouraged or excluded from particular sciences. So it seems that these critics bear the burden of identifying other considerations to show us why we should reject particular methodological developments in particular sciences.

Second, even if we accept the reality of methodological disunity in contemporary science and accept that science may never become unified, this does not mean that we need to be opposed to all efforts to unify particular aspects of science. More recently Kitcher, a leading advocate of explanatory unification in science, has come to embrace ‘modest unificationism’ (Kitcher 1999), which is the view that we should look for and accept local explanatory unifications where we can find these, while accepting that there may be limits to the extent that science can become unified. This is a view that appears to be fully compatible with the methodological disunity of science (Clarke 2004), so it is compatible with opposition to scientific imperialism.

One of the key arguments in favour of the unity of science movement is that explanatory unification has been very important in the development of science (Friedman 1974; Kitcher 1989). The great success of Newtonian mechanics is, in large part, accounted for by the fact that it provided a unifying explanation of planetary motion,
as well as providing an explanation of a variety of laws of motion of earthly behaviour including pendulum motion, projectile motion, and the motion of falling objects. Newton succeeded in either subsuming or correcting a diverse body of generalisations and replacing these with what is universally regarded as a superior explanation to those previously on offer. Given the compatibility of ‘modest unification’ of different sciences with the disunity of science and the reality of successful unification in the history of science that has involved the abandoning of old methods and techniques, it seems that one requirement of any successful account of what is wrong with scientific imperialism is that it will have to be able to allow that some unification in science is acceptable.

Dupré allows that some unification in science is acceptable. According to him Newtonian mechanics, which is an exemplar of unification in science, is also an exemplar of successful science (Dupré 2001, 134). How does Newtonian mechanics differ from unacceptably imperialistic economics and evolutionary biology? Dupré suggests that the relevant difference is that, in the case of Newtonian mechanics, explanatory idealizations are carefully connected to empirical phenomena, whereas in unacceptably imperialistic science they are not. According to him,

The move from point masses and frictionless planes in Newtonian mechanics is empirically validated by the behaviour of real objects sliding or rolling down slopes, and a variety of well-validated methods exist for incorporating greater complexities into more realistic models. Empirical and theoretical bridges between the idealizations of the models and the greater messiness of the real world are an essential part of what makes Newtonian Mechanics a paradigm of successful science. (Dupré 2001, 134)

The deficiencies of economic and evolutionary psychological explanations, when applied outside of their ‘home territory’ are explained by Dupré as resulting from the lack of connection with the reality of the idealized explanatory models used by imperialistic economists and evolutionary psychologists (Dupré 2001, 134–138). Dupré’s account of the explanatory failures of instances of scientific imperialism has only been sketched, but he does appear to suggest a plausible line of development. There are well-developed accounts of the processes of relating idealizations to reality that could be drawn on here, and it seems that Dupré has outlined a plausible way to distinguish acceptable explanatory unifications from unacceptably instances of scientific imperialism. However, what is lacking in Dupré ‘s work is an account of the normative dimension of scientific imperialism. Scientists advance poor explanations all the time. Indeed, the process of choosing between good and bad explanations is part of the development of science. If all scientific imperialists are doing is advancing poor explanations then it is hard to see what the fuss is about? Why are some proponents of poor explanations saddled with the highly pejorative label ‘imperialists’ and why does he consider some explanations to be ‘misguided’ as well as unacceptable?

In what follows we consider how this normative dimension of Dupré’s critique of scientific imperialism might be justified. We explore ways in which one might explain the normative concerns with imperialism. We approach this task by considering the original use of the term ‘imperialism’ in political science.
that the normative force of the charge of imperialism in the philosophy of science is
parasitic upon a general disapproval of political imperialism within our community at
large. Many people believe that there is something morally wrong with political impe-
rialism and, accordingly, if scientific disciplines are said to be imperialistic, then this is
a prima facie ground for concern. This strikes us as by far the most plausible way of
reconstructing what a charge of scientific imperialism might entail. Indeed, it is hard to
see how else one might reconstruct it, since the predominant use of the term is in polit-
ical discourse.

Those who make the charge of ‘imperialism’ are relying on our familiarity with it as
a political term to describe the behaviour of colonialists; and they are doing so to
encourage us to re-evaluate the behaviour of some scientific disciplines. Understanding
the charge requires an understanding of its political provenance. To be sure the use by
Dupré is clearly metaphorical since scientific disciplines are neither nations nor armies.
Not all morally pernicious aspects of colonialism will be pertinent to a proper descrip-
tion of the development of various sciences. What we intend to explore then are the
salient similarities that might be discovered between the colonialist and the scientific
imperialist. Let us turn therefore to its original use in the political realm and consider
the following questions. What do those who oppose imperialism find objectionable
about it? What reasons do we have for thinking that political imperialism is illegiti-
mate? Might those reasons help explain what is in fact objectionable about the coloni-
sation of one area of scientific inquiry by another?

2. What Is Wrong with Political Imperialism?

The word ‘imperialism’ refers to empires, both in terms of its etymology and its use. It
denotes the practice of empire-building by sovereign states. More specifically it is the
policy or goal of extending the power and rule of a government beyond the boundaries
of its original state and taking other nations into the political unit (Robertson 2002,
236). In most instances this will involve the citizens of the subsumed nation possessing
inferior political rights to those enjoyed by citizens of the expanded nation. In such
cases ‘imperialism’ will be, for all intents and purposes, a synonym for ‘colonialism’.

Despite current usage, the term ‘imperialism’ has not always had pejorative over-
tones. Many nineteenth-century Europeans happily described their foreign policy as
imperialist. It was, as Rudyard Kipling suggested, the ‘white man’s burden’ to bring
civilization to the rest of the world. Moreover, if citizenship is extended to all the popu-
lation of the imperial realm, and not just people from the original homeland, then
arguably it is quite possible for many outside of the original homeland to regard the
imperium as legitimate. However, in contemporary discussion imperialism is usually a
term of abuse, employed to denote what the speaker views as an illegitimate extension
of territory and it is this usage that Dupré intends when he describes some sciences as
imperialistic.

For our purposes then we can define imperialism as the illegitimate occupation of
another’s territory. But what makes it illegitimate? In the political literature we can
identify two main currents of thought on this question; the first of which we might call
the *instinct for local autonomy* and the second which we might call the *exploitation model*.

One reason that many have resisted imperialistic expansion is that this invariably violates local autonomy. If we think of political movements against various empires, such as the Indian independence movement of the 1930s and 1940s, they have often been motivated by the ideal of local autonomy, based around a nation of people with a unified culture and set of political values. The thought behind this is either that only local government institutions can properly represent the sovereign group of people (especially in cases where the colonised people do not have the same political rights as citizens of the original homeland) or that the local national group is a natural kind. On the former justification imperialism is wrong because the colonised are not adequately represented in the imperial political institutions. On the latter justification of resistance, imperialistic expansion is in effect against the natural order.

There has also been a long tradition of regarding imperialism as exploitative of local colonised populations. This criticism is famously stated in J. A. Hobson’s (1938 [1902]) canonical tome, *Imperialism: A Study*, which focuses on the commercial origins of imperialism. He saw competition for colonial territory as an extension of the struggle for commercial markets. He also argued that financial capital was predominant in the contest and that financial capital did not encourage domestic production. Therefore he rejected the notion that colonial possession brought advantages to workers in subject states.

This idea that local populations are exploited under imperialism was extended by Lenin in his *Imperialism: The Highest Stage of Capitalism* (Lenin 1970). Just as the wage labourer is exploited by the capitalist who does not pay him or her the full value of his or her labour, so too are colonial populations exploited. For Lenin, then, the struggle for colonial emancipation is connected to the struggle of workers against capitalists. Class war and anti-colonial revolt are both facets of the same movement.

Imperialism is to be condemned morally because the colonised nation gains far less from its resources than would otherwise be the case if those resources were developed locally. A second and related problem is that this gross extraction of profit leads to underdevelopment, since as Hobson (1938 [1902]) suggests, foreign capital does not encourage domestic production (indeed there is a quite substantive literature on underdevelopment). Again this provides moral grounds for condemnation.7

Our topic however is scientific imperialism; what might we take from these criticisms of political imperialism? How applicable might such criticisms be to the problem of the proper relations between the various intellectual disciplines? There are extant uses of the term ‘scientific imperialism’ that appear to draw directly on this political literature. As we noted earlier, some writers have used the term to refer to the practice of Western governments and pharmaceutical companies conducting scientific trials in underdeveloped nations. This is a political concern about the unequal relations between nations. Clearly, Dupré’s concern is not political in this sense. His usage is metaphorical. In the following section we explore some moral criticisms that mirror, rather than draw directly from, political concerns.
3. Justifying Opposition to Scientific Imperialism

We identified two normative elements that typically underpin the critiques of political imperialism. That it interferes with autonomy and that it involves exploitation. The second problem takes two forms. First, exploitation involves an unjust extraction of resources. Second, exploitation unfairly prevents the exploited from realising their potential to develop. To what extent can we apply these concerns to the case of scientific imperialism? We will consider each of these normative underpinnings in turn.

Our first problem is that imperialism interferes with the autonomy of the colonised. This problem carries over to the sciences. When population ecology adopted new statistical techniques from mathematics and physics it lost a certain degree of autonomy. Adopting new techniques meant rejecting old ones which may have led to very different findings. It also meant that population ecologists were, to a certain extent, hostage to developments in mathematics and physics. If the statistical techniques that population ecology now depends on are updated in some way, within mathematics and physics, then it seems that population ecologists must update their techniques accordingly. However, it is hard to see this as being a matter to be regretted, at least in the natural sciences. Population ecologists mostly appear to be happy to have traded a degree of autonomy for the enhanced explanatory power that the importation of new statistical techniques provides.

Are the resources of colonised disciplines exploited by imperialistic disciplines? It is hard to see how they could be because typically a colonised discipline lacks resources that may be used or misused by imperialistic disciplines. Physicists do not typically go to chemistry or any other discipline looking for resources to help solve problems in physics and economists do not typically go to sociology or any of the other human sciences looking for resources to help solve problems in economics. Instead imperialistic disciplines undertake to solve problems in colonised disciplines and disciplines that they are trying to colonise with the intellectual resources that they bring to those disciplines.

The second problem with exploitation, that it is a cause of underdevelopment, is more plausibly relevant to the sciences and this is where the analogy of scientific imperialism to political imperialism appears strongest and may carry important moral implications. It is plausible to think that a science which is colonised by another science may be unable to develop in ways that it would otherwise have been able to develop, had it not been colonised by that other science. However, a defender of scientific imperialism may respond to this line of objection by pointing out that all that has been argued for—so far—is that a discipline that has been colonised by another discipline would have developed differently had it not been colonised. It has not been shown that such development would have been better. Our challenge is to show that a discipline could have developed in some or other beneficial way, had it not been colonised by another discipline.

We see two possible ways in which the above challenge may be met. First, it can be argued that colonisation by another discipline can cause a science to fail to progress in ways that it otherwise would progress. Second, it is sometimes argued that colonisation
by another discipline may lead scientists to fail to appreciate values that are relevant to their discipline. This second line of argument is particularly applicable to instances of colonisation in the human sciences, where it has been articulated by a number of scholars including Radin (1996) and Adler (1998), as well as the philosopher Elizabeth Anderson (1993). We will consider each line of argument in turn.

Dupré’s description of scientific imperialism, as ‘the tendency to push a good scientific idea far beyond the domain in which it was originally introduced and often far beyond the domain in which it can provide much illumination’ (Dupré 2001, 74), appears to suggest that a consequence of allowing scientific imperialism to occur is that we end up with unilluminating explanations, surely an unwanted development. The danger of imperialism in science, on this interpretation, is that it may lead us to fail to recognise that we end up accepting inferior explanations, or failing to investigate possibly superior explanatory alternatives. In thinking that imperialistic economic explanations are unilluminating in the social domain, Dupré is joined by Radin (1996), Adler (1998), and others.

It is not clear that the mere production of unilluminating ideas can itself be regarded as much of a threat to scientific progress. A defender of a laissez faire approach to the market place of ideas could respond by saying that to the extent that scientists and social scientists are inclined to promote unilluminating ideas, they can be expected to be out-competed by the proponents of more illuminating ideas, so the mere presence of unilluminating ideas is no threat to the development of science, in itself.

To sustain the claim that allowing the production of imperialistic ideas to occur is bad for the overall development of science, the opponent of scientific imperialism would need to convince us that there is a danger that imperialistic ideas are liable to succeed in the disciplines they attempt to colonise, despite their lack of explanatory virtue. This conclusion might be reached if it could be shown that social scientists and other members of potentially colonised disciplines are naïve dupes who are liable to fall for the illusory charms of inferior explanations. However, we take it that opponents of scientific imperialism do not, in fact, think that social scientists and other members of potentially colonised disciplines are naïve dupes. Rather, they suppose that these are intelligent researchers who are liable to commit a subtle error. Colonised disciplines accept and attempt to apply the methodologies of the invading discipline on the grounds that these have proved to be fruitful elsewhere. In doing so they fail to appreciate that such methodologies bring with them a way of approaching their subject matter that sheds light on some aspects of the subject of study but obscures others. Valuable ‘indigenous knowledge’ that might otherwise be gained, may be overlooked and valuable indigenous knowledge that has already been gained may be lost, when a successful instance of scientific colonisation takes place, or so the opponent of scientific imperialism can argue.

Understanding scientific imperialism this way provides us with the potential to differentiate between unacceptable instances of scientific imperialism and acceptable instances of unification in science. In acceptable instances of scientific unification, the unification of two or more scientific disciplines occurs without the loss of any significant indigenous knowledge, from either of the disciplines that are subsequently united.
In unacceptable instances of scientific imperialism, however, the imposition of inappropriate external methodologies can result in a failure to obtain important indigenous knowledge, or in a loss of important indigenous knowledge that has previously been obtained, in the colonised discipline.

The idea that indigenous knowledge may be lost when scientific imperialism occurs bears some resemblance to the loss of knowledge that Kuhn (1970) talked of, when particular scientific disciplines switch paradigms (sometimes referred to ‘Kuhn loss’). We now celebrate the transition from the phlogiston theory to the oxygen theory of combustion as a triumph in the history of chemistry. However, this transition involved at least one significant loss. Phlogiston theorists had an explanation for the similarities between different metals, which was given up by oxygen theorists who could not initially explain the similarities between metals and who did not appreciate that this was a matter worthy of their concern (Kuhn 1970, 148). We take it however, that the loss of indigenous knowledge of which opponents of scientific imperialism complain is more significant than ‘Kuhn loss’. The charge against the scientific imperialist is not merely that the transition to a new theory involves a loss of explanatory power that may later be overcome, but that indigenous knowledge will be permanently abandoned because colonisation will prevent the possibility of developing perspectives from which it may be regained.

The second way of defending opposition to scientific imperialism, which was mentioned earlier, is to appeal to the argument that scientific imperialism causes us to fail to appreciate the irreducibly pluralistic nature of human values. Indeed, this is the line of argument developed by Radin (1996), Adler (1998), and other opponents of the use of cost–benefit analysis (CBA) in the social sciences. Roughly the idea in play is that—in a circumstance where we must choose between, say, creating a park and building a new office bloc—a desire for open parkland cannot be directly commensurated with a desire to have additional office space. The advocate of CBA, who attempts to commensurate these two desires, ends up failing to capture what we value about at least one of the two (Anderson 1993). This line of defence of the opposition to scientific imperialism seems more plausible in the defence of the human sciences—where values incommensurability is widely defended—from imperialistic economics and evolutionary psychology, than in the case of the defence of a natural science from the incursions of another imperialistic natural science. Incommensurable values are at stake during instances of the imperialistic incursion of one natural science into another natural science. But even though we have helped shape the values of the natural sciences, they are not particularly human values, because those sciences are not particularly about humans. So, in the natural sciences the values that are at stake are not as compelling to us as those that are at stake in the human sciences.

One might not wish only to protect and preserve human values themselves, as independent objects of moral worth, but also the moral attitudes, modes of regard and normative practices that flow from and are intimately connected with those values. This is precisely what some critics of imperialistic economics have argued. Radin (1996), for instance, holds that we should be careful of the use of what she calls ‘market rhetoric’—by which she means the use of economic discourse to describe what have
traditionally been regarded as non-economic activities—because of what it may cause us to become. Roughly, the idea is that the employment of economic discourse that treats all human interactions as economic exchanges would undermine traditional (and valued) ways of relating to one another. This is a defence of certain humanistic ways of describing and understanding human society. It is perhaps not a defence that will convince those who are not already accept that there are irreducibly pluralistic human values to be accounted for. Indeed it may leave imperialistic economists, who may not accept that there are such values to be uncovered, distinctly underwhelmed. But nevertheless, is a possible line of defence of a way of understanding human society that can be deployed by the opponent of scientific imperialism, and as such it deserves out consideration here.

4. A Foucauldian Relativist Alternative?

In suggesting ways in which the wrongness of scientific imperialism might be explic- cated we have relied on non-relative, objective concepts, as do Cartwright and Dupré. If we accept that scientific imperialism can impede the progress of a discipline, then this is because we accept that there is such a thing as progress in science and that progress in science is distinct from mere change. If we accept that scientific imperialism causes us to lose sight of important human values, then we accept that there really are important human values that ought to be expressed. It has been suggested to us that if we abandon these realist assumptions, and adopt a broadly relativist position, then there is another way of cashing out the wrongness of scientific imperialism, which draws on the ideas of Foucault.

There is an influential strand of Foucauldian thought that emphasises the extent to which individual scientists and groups of scientists are involved in a struggle to dominate one another, by having their favoured ideas accepted as scientific fact and having their opponents’ ideas repudiated (see, for example, Latour 1987). On such views, it is understandable that scientists should seek to resist intellectual colonisation by other scientists, so it may seem that this view is a basis for a justification of resistance to imperialism. However, there are several problems for the articulation of a Foucauldian relativist account of opposition to scientific imperialism.

First, such an account would achieve too much. We want to be able to say what is wrong with scientific imperialism while allowing that some instances of disciplinary colonisation are not to be regretted, such as the colonisations that took place during the Newtonian revolution. However, it seems that the Foucauldian relativist has no resources to underwrite a distinction between acceptable forms of colonisation and unacceptable ones, so all must be rejected. Second, the Foucauldian relativist exposes the scientist who is opposed to scientific imperialism to the charge of hypocrisy. If all scientists struggle to intellectually dominate other scientists, then scientists who are opposed to scientific imperialism struggle to intellectually dominate other scientists. Third, the Foucauldian relativist provides no reason to explain why a non-scientist should care about power struggles between the sciences. Why should a non-scientist care if economics succeeds or fails to succeed in dominating sociology, if there are no
truths of sociology at stake or enduring human values at stake? A further problem is that because the Foucauldian relativist position is a relativist position, a proponent of it needs to deal with all of the various criticisms that have been made against relativist positions in general.\textsuperscript{11} It seems to us that, despite appearances, the Foucauldian relativist lacks the intellectual resources on which to base a well-formed objection to scientific imperialism.

5. Conclusion

We have examined Dupré’s criticisms of scientific imperialism and identified two ways in which these may be further articulated and which provide grounds for concern. If instances of scientific imperialism were to lead to the adoption of explanations that are inferior to those that would have been otherwise been adopted, then these should be resisted. In the human sciences, scientific imperialism raises an additional concern, which is that important human values could fail to be expressed, and we might become the sorts of people that, on reflection, we would not wish to have become.

Although Dupré has voiced concerns over the colonisation of one discipline by another, the normative grounds for expressing what might be wrong with such colonisation has not yet been teased out in any depth. Our discussion shows that there is some reason to be concerned about the possible effect of scientific imperialism in the natural sciences, and even more reason to be concerned about the possible effect of scientific imperialism in the human sciences. According to Dupré, ‘the most pressing questions about horizontal unification arise in the study of human behaviour’ (Dupré 1996, 374). Unfortunately Dupré does not explain why issues of imperialism in science are more pressing in the human sciences. Our results are in accordance with Dupré’s intuitions about the dangers of scientific imperialism, and by articulating two separate concerns about the dangers of scientific imperialism we account for the particular importance of these concerns in the human sciences.

Acknowledgements

We would like to thank Howard Sankey, James McAllister, and two referees of this journal for some very helpful comments on earlier versions of this paper.

Notes

[2] Cartwright is also an antireductionist and is also opposed to horizontal unification. She refers to horizontal unification as ‘cross-wise reduction’ (Cartwright 1999).
[3] Mid-twentieth-century proponents of the unity of the sciences proposed a variety of different ways in which the sciences might be unified. Similarly, late-twentieth-century advocates of the disunity of science movement propose various ways in which science may be said to be disunified. Hacking (1996) provided a helpful disambiguation of many of these. In addition to being a proponent of the methodological disunity of science Dupré (1993a, b) is a proponent of the metaphysical disunity of science. Our focus here is on his commitment to methodological
disunity because, on Dupré’s account of scientific imperialism, the colonisation of one science via another occurs by the transmission of methods (Dupré 2001, 128).

[4] We have understood Dupré’s methodological pluralism to amount to the claim that there is no one method that is the method of science. Perhaps though, Dupré’s methodological pluralism could be interpreted as also involving the claim that there are particular but distinct methods that are the correct methods for particular sciences (thanks to an anonymous referee for pointing out this possibility). On this reading there would be an additional reason for an advocate of methodological pluralism to oppose scientific imperialism, namely that it can result in a failure of a science to be conducted via the use of the correct methods.

[5] Dupré (1993b) has other concerns about the explanatory record of economics within its home territory.

[6] Detailed accounts of the process of relating idealisations to reality can be found in Krajewski (1977) and Nowak (1980).

[7] In addition to these objections to imperialism, many critics have objected to the attitudes associated with imperialism. They point to the hubris that is often exhibited by those who colonise other peoples or to the attitudes of superiority concomitant with the view that imperialists have a right to colonise other peoples.


[9] Indeed, it has recently been argued that the field of ecology is currently overreliant on null hypothesis significance testing and needs to undergo substantial statistical reform (Fidler et al. 2004).


[11] Discussion of these is beyond the scope of this paper. For a recent response to the relativist see Boghossian (2006).

References


