Hans Radder, Vincent Colapietro and Joseph Pitt have all raised interesting comments and concerns regarding the volume on pragmatist ethics. In our reply we will unfortunately not be able to address all of them equally extensive, but we will single out what we perceive to be the running threads through the comments.

The Double Movement of Pragmatism's Universalism

Hans Radder raises the issue of the status of universal norms, which allows us to give some more consideration to this issue. The pragmatist move against universalism is directed towards the widespread illness in philosophy to determine a priori, without factual inquiry, that some norms or criteria are universally valid. Pragmatism has two objections to this. The first concerns the fact that very often more important things are to be done in deliberating pressing ethical issues than to spell out and justify a priori valid norms through transcendental deductions or other non-empirical thought exercises. For example, paying serious attention to dilemmas at hand in order to discover promising approaches or possible answers to urgent ethical problems is often more fruitful than doing this a priori justification work. The second objection is that these non-empirical and non-experimental justification procedures are seen to be highly subjective and not very reliable.

From Plato onwards philosophers have been craving towards the universal by postulating some eternal truths and deriving from them some local rules that are to be upheld by commoners. Pragmatism is not against all forms of universalism; the universalism pragmatism is against is the universalism-from-above, that excludes serious discussion. It is also opposed to the kind of universal claims to validity that are not put forward as invitations to either agree and to live accordingly, or to come up with serious counter arguments (here Radders distinctions are very helpful). This leaves room for universal claims a posteriori, universalism-from-below, from human practices. It is therefore not inconsistent to argue that pragmatists are against a certain type of universalism and at the same time to uphold certain norms or criteria of which it is claimed that they are underwritten by the practices involved or, different thing, should be underwritten. The first claim is then a deliberately empirical claim, based on investigation of all opinions on the issues covered by the norms. The second claim is a deliberately normative claim that invites all addressees to agree. The universalism-from-below does not imply the expectation that finally, somewhere, all practices will converge; it does not contain a utopian dream of a transcendental ideal of universal consensus, but the understanding that many practices do have similar norms and uphold similar values with respect to certain topics. Rawls' (1993) idea of an overlapping consensus across communalities belongs to this empirical universalism.

The universalism-from-below takes the shape of a double movement. The first movement starts with local practices and local principles and their locality transcending power. Ethical orientations are contextual, but not context-bound, and can have a generalizable meaning (Kettner 1998). In how far those locality-transcending transpositions (be it norms, technologies, or institutions) will acquire consensus or not is an interesting issue and depends inter alia on the fruitfulness of these local norms. The second movement starts with the emergent aspects of what could be called a common, although fragmented, moral orientation. If one takes into account that practices nowadays are becoming more and more interdependent, it happens that these practices do indeed share a common morality vis-à-vis certain hot ethical topics. This common morality is incorporated in international institutions like those of the UN and in international treaties. This common morality is gaining influence with respect to practices, cultures and
countries that are still deliberating. For example, the International Treaty on Plant Genetic Resources for Food and Agriculture spells out conditions of ethically sound technological use of resources on the basis of the norm of intergenerational sustainability. This treaty has been signed by many nations and the remaining nations are under pressure to take a stance toward this treaty. Long debates and deliberations took place before this treaty was formulated, and in this process of discovery of a potentially universal norm, a priori dictates were out of place. Reservations against universalism-from-above should not make one blind for the many factual agreements there are already at hand with respect to human rights, environmental protection, technology and natural resources.

The Right and The Good

Let us unpack the implications of these translocations from a local level to a general level and vice versa, by referring to Habermas' distinction between a moral and an ethical discourse (Habermas 1991). In his comments, Colapietro seems to suggest that it is not fruitful to distinguish between the moral question of "what is equally good for all" and the ethical question of "what is good for us" as members of a specific community.

The distinction between moral issues for all and ethical issues for a specific community appears to be clear and applicable enough, but the contrary is the case. This is probably what motivated Colapietro's critique. We would like to add that the distinction is too crude because a whole range of social collectivities exists between a particular group and the global moral community. However, instead of discarding this distinction altogether, we want to stress the importance of the context in which it is applied. In some cases it can be helpful, in others not; in some cases what is good for all is clear (such as 'do not kill', or 'do not lie'), in other usually more interesting and more urgent cases it is not. Take for example a question like: should we invest in genomics to improve crops or should we invest in traditional technologies? Or: should we use this and not that pre-implantation technology? It is a priori absolutely not clear which considerations are moral and which ones ethical, that is to say: which ones deserve general agreement (and to what extent), and which do not. Pragmatists like Dewey consider identifying and solving ethical dilemmas in connection with technology as a process of invention and reconstruction, and this applies also to the distinction between the moral and the ethical.

As a consequence, the double movement of transcending local communities by generalizing their ethical strategies to a meso or even global level (or vice versa) leaves it to be seen which solution in the end turns out to be something that deserves generalized or less generalized agreement. For example, several natural and social technologies are involved in managing scarce natural resources, but there are various management strategies with different ethical connotations. The strategy of self-management by stakeholders of nearly extinct natural resources like salmon in Scotland might not be transferable to the pacific where the same kind of fish are being threatened. Here, global agreement on the strategy is not necessary, only the recognition that different species of salmon are a valuable natural common heritage that deserves to be preserved for the next generations (as stated in the earlier mentioned FAO-treaty). Another example, food safety arrangements can have different ethical connotations, depending on the various contextual definitions of food safety. Here again, the management of food technologies cannot nor should always be generalized (Korthals 2004). In sum, it is an open question what the scope of a normative claim should be and what evidence can be brought forward in these different cases.

Consensus, compromise and coexistence

Calapietro also criticizes our ideal of 'equal coexistence' as distressingly unpragmatic. This conclusion seems to rest (at least partly) on the fact that his conception of 'consensus' differs significantly from ours. Colapietro apparently sees consensus and compromise as much the same thing. He claims that it cannot be ruled out a priori that consensus or compromise among diverse communities can be achieved in practice. "The limits of compromise and consensus are, for pragmatism, experimentally determinable" he says. We do agree with this experimental approach when it comes to determining where the empirical limits and possibilities for consensus and compromise lie.

However, we do want to hold on to an analytic distinction between consentus and compromise. Following Habermas, we understand rational consensus to be agreement on reasons for action, whereas a fair compromise is the agreement on a specific action without agreement on the reasons for action. Moreover, a compromise means that everyone involved makes concessions with regard to their interests. In other words, the difference between consensus and compromise is that between arguing and bargaining.
From this definition it follows that the notions of a rationally motivated consensus and of an ethical pluralism between communities are mutually exclusive.

Second, given our pluralist condition, the core question of pragmatism, how to live and work together, is therefore an urgent one for which consensus is not always a feasible answer. Compromises, on the other hand, are not always suitable because on deep-seated value conflicts people find it hard to bargain and to make concessions without compromising themselves or their integrity. Where consensus or compromise are unattainable we have suggested that we should aspire to an "equal coexistence" of different ethical convictions.

We like to take this opportunity to elaborate a bit more on this ideal and on the ways to realise it. We want to do so by invoking the notion of 'boundary work', which has been developed in Science and Technology Studies (STS), and by connecting this notion with those of "frame restructuring" and "frame reflection" as developed within Public Policy Studies (PPS).

**Boundary work**

The tension between the heterogeneity of various actors and their viewpoints on the one hand and the necessity of cooperation and collective problem solving on the other can often be resolved through "boundary work." The term "boundary work" was launched in 1981 by Steven Woolgar, and further developed by Thomas Gieryn in the context of the discussion on the demarcation of science and non-science. Gieryn studied how actors carve out a domain of cognitive authority for their discipline. He stressed the negotiated nature of what is considered science and what not. According to Gieryn the boundaries of science are fluid rather than fixed. His focus is on processes of differentiation, demarcation and distancing science from pseudoscience, ideology, or beliefs.

Susan Leigh Star has shifted the focus from competition over cognitive claims and cultural capital to cooperation across the lines that separate communities. The two approaches are complementary. Together, they illuminate what separates or integrates various groups with different moral convictions and worldviews, and what complicates or facilitates communication and cooperation between them.

On the basis of a case study of the historical development of the Museum of Vertebrate Zoology at the University of California, Star shows how heterogeneity and cooperation can coexist in the field of science. Scientific work is heterogeneous, requiring many different actors and viewpoints, but at the same time it also requires cooperation—"to create common understandings, to ensure reliability across domains and to gather information which retains its integrity across time, space and local contingencies" (Star & Griesemer 1989, p. 387).

In line with our pragmatist view, Star asserts that the tension between the heterogeneous nature of scientific work and its requirement for cooperation cannot be managed via a simple pluralism or a laissez-faire solution. Star introduces the notion of "boundary objects" to explain how people in practice handle both diversity and cooperation. Boundary objects are those objects that both inhabit several intersecting social worlds and satisfy the informational requirements of each of them.

Boundary objects are objects that are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual-site use. These objects may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation. The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting social worlds (p. 393).

One of the most important features of the boundary object is that one group does not create or set the meaning of the object for other groups nor does one group regulate access to the object by other groups. "Boundary objects act as anchors or bridges, however temporary" (p. 414). They allow for equal coexistence without the necessity for consensus or compromise.
Metaphors as Boundary Objects

It is clear that boundary objects are quite divers. They not only include objects in the strict sense but also concepts, not only products but also processes and even people. An important type of boundary object is metaphor. Metaphors are mechanisms for understanding something in terms of something else. The conceptual function of metaphors is generally to understand complex, abstract or unstructured domains with the help of concepts from more familiar, concrete and well-known domains. But metaphors are not only important cognitive tools in making sense of the world but also in communicating about the world with others. This fits well with the comments of Joseph Pitt, who states that in seeking creative solutions to ethical problems posed by technological innovation, we have to start with the way we talk about our technologies. He claims that we need to come to a common language and the way to proceed is through metaphor. We agree with Pitt on the importance of metaphor and would like to point out that metaphors act like boundary objects. They are ambiguous and also flexible enough to allow for several uses and interpretations, both over time and across various topics, yet at the same time they are robust enough to maintain a basic set of conventional associations. Metaphors offer resonance between different social and temporal domains, they may serve as diplomatic devices that facilitate communication between different discourses and may function as tools of translation across the boundaries that separate different groups or communities (Hellsten 2002).

However, we do not agree with Pitt’s statement that the way to find the right metaphor is by applying what he calls the pragmatist’s first maxim: "consider the consequences." We believe that the test should rather be what we consider to be the first maxim: "facilitate cooperation and cohabitation.”

In further elaborating this facilitating role of metaphor we can benefit from the work of pragmatist Donald Schön. According to him the difficulties in handling intractable social and moral controversies have more to do with problem setting than with problem solving, "more to do with ways in which we frame the purposes to be achieved than with the selection of optimal means for achieving them" (Schön 1979, p. 255).

According to Schön, problem settings are mediated by the stories in which people tell what is wrong and what needs fixing in a troublesome situation. When we examine these problem-setting stories, it becomes apparent that the framing of problems often depends upon metaphors underlying the stories which generate problem setting and set the directions of problem solving. Metaphors enable us—generally automatically and unconsciously—to make a “normative leap” from data to recommendations, from fact to values, from "is" to "ought." Schön gives the example of a slum that could be framed as a disease (that must be cured) or as a natural community (which must be protected or restored). Once we can see the problematic situation in terms of a normative dualism such as health/disease or nature/artifice, we shall know in what direction to move. It is the metaphor articulating the frame that carries over the logic from "is" to "ought."

As a pragmatist, Schön is interested in the creative and constructive resolution of policy controversies, generated by different and conflicting metaphors. Such controversies seem intractable; they are often not resolvable by recourse to facts and unlikely to be settled by compromise. They require what Schön calls "frame restructuring.” Hereby "we respond to frame conflict by constructing a new problem-setting story, one in which we attempt to integrate conflicting frames by including features and relations drawn from earlier stories" (p. 270).

A necessary condition for frame restructuring, i.e. the recasting and reconnecting of things and relations in the perceptual and social field, is frame reflection. This requires what Schön and Rein have called "double vision": "the ability to act from a frame while cultivating awareness of alternative frames" (Schön & Rein 1994, p. 207).

This notion of double vision expresses exactly the kind of attitude that is required for the pragmatist ideal of equal coexistence. As we noted in our volume: "The conflicting parties have to appreciate the fact that they are competing for primacy within the same universe of discourse with others who cannot beforehand be branded as unreasonable. Such reflexive awareness rejects the naivety of dogmatic beliefs, recognizes its own fallibility and leaves room for 'reasonable dissensus'” (Keulartz et al. 2002, p. 262).
Moral Agency?

Both Radder and Pitt have commented on the editors' claim that technological artifacts possess a written-in or built-in normativity. While Radder believes this claim to be misleading, when it does not take into account the context, Pitt believes it to be utterly wrong. Pitt's remarks on ethical colonialism—"the attempt to endow everything in the world as an actor with moral value"—are certainly astute. They provide a sharp warning against trendy but sloppy philosophizing. And we could not agree more with him that things are not moral actors like humans are, and do not possess moral value like humans and other sentient animals possess. Nowhere in the book do we suggest that things have moral value because they are moral actors. Moreover, as we will show further on, we share his opinion that not everything is or should be moral; there are other important values as well. However, we do believe that it is useful to speak of artifacts as (possible) moral agents. Not for ontological reasons, but for pragmatist ones.

Different ways of describing the relations between humans, technological artifacts and ethics highlight different elements of technological culture, and obscure others. Pitt squarely "places normativity in people." Normativity rests exclusively on human values and the choices we base thereupon. In his vision, there is no room for any agency of things. Pitt's concern seems to be that by ascribing normativity to artifacts we conflate categories. This in turn can easily lead to downgrading humans to the level of things, or upgrading things to the level of humans. The former is humiliating and dangerous—as has been made abundantly clear by the atrocities of the previous century. The latter is merely silly, like when the ancient Persian king Darius had the sea flogged because it had devoured his war fleet.

We share Pitt's implicit (and Kant's explicit) concern that one should not treat humans as things. But we do not think that it is by definition silly to describe the influence of things in terms usually preserved for human agents. Indeed, we think this a prerequisite for developing a vision in which normativity is co-created by humans and non-humans. Or to phrase this differently: in which normativity is a characteristic of the network, not of choosing individuals. A vision, we believe, that is even implied in Pitt's own comments.

We presented the birth control pill as an example of an artifact as moral actor. Pitt points out that a) the pill was developed with traditional Catholic values in mind and b) that it had completely different consequences. For him this proves that artifacts do not possess a normativity of their own. For us it does prove exactly that. The gap between designer intentions and realized consequences provides a strong argument to talk of artifacts as possessing an agency of their own. We can even bow here to Pitt's first maxim of pragmatism ("consider the consequences"), which he himself seems to forget when he equates the normativity of the pill—if any—with the intentions of its designer. For Pitt these intentions were thwarted by the conflicting intentions of the users—the women in this case. We, on the other hand, feel that it is reasonable to say that these user-intentions in their turn were partly shaped by the artifact itself. Once the pill existed, it created new possibilities that changed women's (and in the end, men's) expectations of life, relationships, parenthood, work, and so forth. Pitt himself acknowledges that artifacts can influence our values and choices when he speaks of technological change as threatening our conceptions of the good life, our most fundamental values. Now, how to threaten without being an actor in a certain sense?

Co-evolution

Technological artifacts possess a robustness, inertia and/or "uncontrollability" that makes that they do not quietly conform to the choices of their designers or users. They can even shape these choices. After a while it becomes impossible to determine who or what shaped what or whom first. Our human fates, including our morals, have become deeply entwined with the fates of non-humans. Sometimes we draw a sharp line between the two. After all, there is quite a relevant difference between hitting a nail or a neighbor. At other times softening the distinction opens our eyes for the intricacies of living in a technological culture where technology and culture co-evolve. Technological development is in part the result of technological, epistemic values, partly of cultural—including moral—values. And the same has become true of moral development. Humans do not choose or value in a technological vacuum. In our technological culture morality is co-produced by humans and non-humans.

A possible task for pragmatist ethics is studying this co-production, in the hope of enlarging our ability to "manage" it. There are many different modalities of co-production. In the most clear-cut case, artifacts can force us to (not) perform certain actions, leaving us
little or no choice. The speed bump in the road forces me to drive at a safe speed. We have delegated part of our morals to artifacts. But the same bump hinders the ambulance on its way to an injured child. In this unintended consequence the "robustness" of the artifact, its own agency, becomes manifest. It is interesting to note that in the case of "forced actions" artifacts operate directly, with little or no symbolic mediation. My car can be more or less environment-friendly without me knowing anything about it. The result is a decrease of moral deliberation: driving safely becomes a matter of routine or necessity, independent of any explicit moral intentions or choices on the side of the driver (Achterhuis 1995, pp. 204-222).

Artifacts forcing us to do the right thing are relatively rare. More often they provide us with new possibilities—usually closing off a few existing ones in the process. These possibilities do not simply enlarge our freedom, they also kiss to life dormant obligations and responsibilities by supplying the "cans" to "oughts" we had scarcely realized existed. In this sense, it can be argued—opposite to what we said above—that technology increases the room and need for moral deliberation. An example would be the way in which the technical possibility for organ transplantation has created a whole new responsibility, and according to some even a moral duty, to donate one's organs.

Furthermore, artifacts open up new worlds by changing or enlarging the ways we perceive ourselves, our fellow humans and the objects around us (Verbeek 2000). Think about the telescope that made us realize how infinitely small we are, or about the television that sometime creates solidarity between humans who never met each other in person, or the cars and trains that completely changed our relationship to the environment—now speeding by. Sometimes these technologically induced changes in perception have relevant moral consequences and sometimes they do not.

Are we now falling into the trap of ethical colonialism, attributing moral agency to all artifacts? We believe not. We already saw that technology can lead as easily to more morality as to less. But there is a more pragmatist reason. Often the influence of artifacts is trivial, e.g. when Joseph Pitt has to change course because a tree is in his way. Sometimes it isn't, e.g. when a fence directs him to a gate where officials are waiting to photograph him and take his fingerprints. In the first case it makes no sense to talk about the moral agency of things, in the second case it does. Not because the tree and the fence act differently, but because they interact differently with our values. It all depends on the context—in this respect we fully agree with Radder. In the end it is us who decide when a thing makes relevant changes in our behavior or values. We decide when artifacts are moral actors.

We thank our commentators for giving us an incentive to further develop our thoughts on the relevance of pragmatist ethics for a technological culture. We realize that we failed to supply convincing answers to all the questions they raised, but we hope we have at least clarified a few points. We understand our proposal for a pragmatist ethics as a research program (Schermer & Keulartz 2003), which we expect will have the heuristic power to generate the new ideas and fresh insights that are needed to accommodate our moral convictions and technological inventions.

References


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1 As a historical anecdote we can add that in the Netherlands the pill was originally manufactured in the Catholic south and was packed by nuns.