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ARTICLES

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Ethics without Metaphysics

When I was a graduate student slightly more than fifty years ago, the Logical Positivists claimed to have shown that ethical propositions only appear to be bona fide assertions; in reality, they lack truth, value and that, indeed, they are outside the sphere of rational argument altogether. As Lionel Robbins, one of the most influential economists of the 1930s (possibly the most influential, in fact), enthusiastically endorsed this view,

> If we disagree about ends it is a case of thy blood or mine—or live or let live according to the importance of the difference, or the relative strength of our opponents. But if we disagree about means, then scientific analysis can often help us resolve our differences. If we disagree about the morality of the taking of interest (and we understand what we are talking about), then there is no room for arguments.[1]

The Logical Positivists were, famously, allergic to the word 'metaphysics'. They thought that in banning ethics from the sphere of rationally discussable subjects they had made a 'logical discovery', not that they had propounded a metaphysical thesis. And today, unfortunately, a host of people who have never heard of a position called 'logical positivism', likewise speak as if it were self evident that ethical views are essentially subjective. Every one of you has heard someone ask, "Is that supposed to be a fact or a value judgement?". The presupposition of this 'stumper' is that if it is a 'value judgement' it can't possibly be a 'fact', and all too often further presupposition is that value judgements are 'subjective'. The view that value judgements are not facts, and the inference that if they are not facts they must be subjective, have a long history. Contrary to what the Logical Positivists supposed, the view, and this inference, rest on

metaphysical views, views that go back to David Hume. The claims that ethical propositions aren't true or false, aren't justified or unjustified, aren't, in fact, genuine assertions at all, are deeply infected with metaphysics. In this lecture* I want to trace that history, and show you how that metaphysics, and the arguments based upon it, have collapsed. At the very close of this lecture, I will say a few words about ethics. But the bulk of this lecture will be, as Hegel might have put it, "the negation of the negation" of ethics—that is, the rebuttal of the sort of negation of ethics I have just described.

I said that you have all heard people draw a supposedly sharp dichotomy between 'facts' and 'values'. On the other hand, some of you may never have heard the terms 'analytic' and 'synthetic'. 'Analytic' is a term introduced by Kant for what most people call 'definitional' truths, for example, "All bachelors are unmarried". The logical positivist claimed that mathematics consists of analytic truths. 'Synthetic' was Kant's term for the *non*-analytic truths, and he took it for granted that synthetic truths state 'facts'. His surprising claim was that mathematics was both synthetic and *a priori*.

I believe that these two dichotomies, 'fact versus value judgement' and 'fact versus analytic truth' have corrupted our thinking about both ethical reasoning and description of the world, not least of all by preventing us from seeing how evaluation and description are interwoven and interdependent. That's what I am going to talk about, but I will end by saying a few words about a view—the 'more positive' one I just promised—that rejects both dichotomies.

The History of the Fact-value Dichotomy

The two dichotomies I mentioned have parallel histories. Each was anticipated by David Hume. The fact/value dichotomy is already implicit in Hume's famous doctrine that one cannot infer an 'ought' from an 'is', and the 'analytic/synthetic' dichotomy is anticipated by Hume's distinction between 'matters of fact' and 'relations of ideas'. (By the latter term, Hume meant such truths as 'All squares are rectangles' and 'a star is not a hedgehog'—the things we often call 'true by definition'.)

Although Hume's claim that one cannot infer an 'ought' from an 'is' is widely accepted (sometimes this is called 'Hume's Law'),

the reasons that Hume gave in support of it are by no means accepted by those who quote Hume so approvingly.[2]

One clue that the claim that "one cannot infer an 'ought' from an 'is'" presupposes a substantial metaphysics (as opposed to being a simple logical point) is that no one, including Hume himself, ever takes the claim *literally*. Taken literally, the claim would prohibit one even from inferring "you ought to do X in such-and-such circumstances" from "For you to do X in such-and-such circumstances is good, and for you to refrain from doing X in those circumstances is bad". But Hume himself did not understand the claim so literally (nor do his readers). Rather Hume assumes a metaphysical dichotomy between 'matters of fact' and 'relations of ideas' (the dichotomy that I just described as his anticipation of 'the analytic-synthetic distinction'). What Hume meant was that *when an 'is' judgement describes a 'matter of fact', then no 'ought' judgement can be derived from it.* Hume's metaphysics of 'matters of fact' was the whole ground of the alleged underivability of 'ought' from 'ises'.

However, Hume's criterion for 'matters of fact' presupposed what can be called 'pictorial semantics'[3]. Concepts, in Hume's theory of the mind, are a kind of 'idea', and 'ideas' are *mental images*; the only way they can represent any 'matter of fact' is by *resembling* it (not necessarily visually, however—ideas can also be tactile, olfactory, etc.).

Humean 'ideas' have non-pictorial properties as well; they can involve or be associated with *sentiments*, i.e. emotions. Hume does not just tell us that one cannot infer an 'ought' from an 'is'; he claims, more broadly, that there is no 'matter of fact' about *right* and no matter of fact about *virtue*.[4] The reason is that if there *were* matters of fact about virtue and vice it would have to be the case (if we assume 'pictorial semantics') that the property of virtue would be *picturable* in the way that the property of being an apple is picturable, Hume was quite correct, *given his inadequate and outdated semantical views*, to conclude that there are no such matters of fact; and given that 'passions' or 'sentiments' were the only other properties of 'ideas' available (to Hume) to account for its so much as seeming to us that there are, he was quite reasonable to conclude that the components of our 'ideas' that correspond to judgments of virtue and vice are 'sentiments' aroused in us by the 'contemplation' of the relevant actions owing to 'the particular structure and fabric' of our minds.[5]

The role of Kant in the further evolution of what was to become our contemporary fact-value dichotomy is too complex to go into any detail here. Suffice it to say just as the collapse of the philosophical credibility of Kant's notion of a 'synthetic *a priori* truth' led the Logical Positivists to go back to a vastly inflated version of Hume's idea that a judgement is either analytic (deal with 'relations of ideas') or synthetic *a posteriori* (deal with "matters of fact"), and also led them to claim that mathematics is analytic (since the classic empiricist attempt to show that mathematics is synthetic *a posteriori* didn't work), so the collapse of the philosophical credibility of Kant's notion of 'pure practical reason', and of the *a priori* ethics that Kant founded on that notion, led the Logical Positivists to go back to a vastly inflated version of Hume's idea that ethical judgements are not statements of fact at all but either expressions of sentiments or disguised imperatives[6]—imperatives which *cannot* however be rationally justified, but which simply reflect, at bottom, the 'volitional' state of the speaker. As Carnap aggressively put it in *The Unity of Science*[7], after explaining that all non-scientific problems are "a confusion of. . . pseudoproblems".[8]

> All statements belonging to Metaphysics, regulative Ethics, and (metaphysical) Epistemology have this defect, are in fact unverifiable and, therefore, unscientific. In the Viennese Circle, we are accustomed to describe such statements as nonsense (after *Wittgenstein*[9]). This terminology is to be understood as implying a logical, not say a psychological distinction; its use is intended to assert only that the statements in question do not possess a certain logical characteristic common to all proper scientific statements [i.e. verifiability—HP]; we do not intend to assert the impossibility of associating any conceptions or images with these logically invalid statements. Conceptions can be associated with any arbitrarily compounded series of words; and metaphysical statements are richly evocative of associations and feelings both in authors and readers.

The "Fact" Side of the Dichotomy

As we have just seen, the 'fact-value dichotomy' is, at bottom, not a *distinction* but a *metaphysical thesis*, namely the thesis that 'ethics' is not about 'matters of fact'. In Hume's case, the thesis was not meant

to rule out the possibility of a philosopher's writing a textbook of ethics, whereas in Carnap's case it certainly was so meant. (In the quotation from *The Unity of Science* above, ethical utterances were allowed no more meaning than 'any arbitrarily compounded series of words'!) The Logical Positivists' purpose was to *expel* ethics from the domain of knowledge, not to *study* it in the slightest detail. But their confidence that they could do this was derived from their doctrine that to be knowledge, ethical 'sentences' would have either to be analytic, which they manifestly are not, or else would have to be 'factual'. And their confidence that they could not be factual, just like Hume's confidence that "the crime of ingratitude is not any particular fact" derived from their confidence that they knew exactly what a *fact* was.

But science had changed radically since Hume's day, and the Positivists found themselves pressed more and more to abandon their initial notion of a fact (which was somewhat similar to Hume's), in order to do justice to the revolutionary science of the first half of the twentieth century. And in revising their notion of a fact, I shall argue, they destroyed the very basis on which they had defended the fact-value dichotomy!

The Humean notion of a 'fact' is simply something of which there can be a sensible 'impression'. When Hume asks, for example, what is the factual component in the notion of *causation* and what added to the fact by a sort of projection, and decides that the idea of necessitation (i.e. of *bringing about*) is something that we add by projection, all he has to do is to ask whether there is such a thing as an 'impression' of necessitation. (It is interesting that so many philosophers who continue to think that Hume 'showed' that there is no such thing as an ethical fact today reject the identical arguments that Hume offered in connection with *causation*!

At the time that the Vienna Circle was formed, however, the situation was very different. Bacteria, which are not 'observables' in the Logical Positivist sense were known to exist (with the aid of the microscope), and although the reality of 'atoms' was denied by some of the world's best physicists prior to the performance of the Millikan oildrop experiment in 1909, after that experiment working physicists (though not such physicist-philosophers as Mach and Bridgman!) were almost all prepared to regard them as perfectly real things. Moreover, the internal structure of atoms was rapidly being discovered—electrons, protons, neutrons, followed by

positrons, mesons, and a host of other particles became a large part of the physicist's everyday ontology. The Logical Positivists themselves were deeply impressed by the successes of Relativity theory (which speaks of 'curved space-time') and quantum mechanics. The idea that a 'fact' is just a sensible 'impression' would hardly seem to be tenable any longer.

Yet the Logical Positivists held out against conceding this for more than a decade.[10] For them, the predicates admitted into the 'factual' part of the language of science had to be 'observation terms' or reducible (by specified and limited means) to observation terms. (Other, mathematical and logical, predicates could be admitted into the 'analytic' part.) The dismaying consequence was that statements about *bacteria* or *electrons* or *the gravitational field* would either have to be counted as 'nonsense' (along with 'metaphysics' and 'normative ethics') or else would have to be 'reduced' to observation terms. Either we never *really* talk about atoms at all (such talk is just a *façon de parler*, just as so many physicists had thought before the Millikan experiment), or else the Logical Positivists' 'criterion of significance' has to be radically revised. By 1939 Carnap had come to the conclusion that the latter was the only possible course to take.[11]

As a result, the Logical Positivists liberalized their famous 'criterion of cognitive significance', by holding that cognitively meaningful language could contain not only observation terms (and terms defined in terms of these) but also the so-called 'theoretical terms', terms referring to unobservables and introduced by systems of postulates, the postulates of the various scientific theories. As long as the system as a whole enables us to predict our experiences more successfully than we could without them, such predicates [theoretical predicates] were now to be accepted as 'empirically meaningful'. But to *predict* anything means (on the Logical Positivists' account) to *deduce observation sentences from a theory*. And to deduce anything from a set of empirical postulates we need not only those postulates *but also the axioms of mathematics and logic*. And, according to the Logical Positivists, these axioms—and many of their consequences, as well as our old friends, the verbal truths like "All bachelors are unmarried"— do not state 'facts' at all. They are *analytic* and thus 'empty of factual content'. In short, "belonging to the language of science" is (from a Logical Positivist point of view) a criterion of *scientific* significance, but not everything

scientifically significant is a statement of *fact*. Within the scientifically significant there are, according to the Logical Positivists, *analytic* as well as *synthetic* (i.e. factual) statements. Thus the search for a satisfactory demarcation of the 'factual' became the search for a satisfactory way of drawing 'the analytic-synthetic distinction'.

At this point[12] (1950), however, Quine demolished the (metaphysically inflated)notion of the 'analytic' to the satisfaction of most philosophers. But he did not suggest that every statement in the language of science should be regarded as a statement of 'fact' (i.e. as 'synthetic')[13]; rather Quine suggested that the whole idea of classifying such statements as the statements of pure mathematics as 'factual' or 'conventional' [which the Logical Positivists equated with 'analytic'] was a hopeless muddle. But if the whole idea that there is a *clear* notion of fact collapsed with the hopelessly restrictive empiricist picture that gave rise to it, *what happens to the fact-value dichotomy*?—As the economist-philosopher Vivan Walsh has written, "To borrow and adapt Quine's vivid image, if a theory may be black with fact and white with convention, it might well (as far as logical empiricism could tell) be red with values. Since for them confirmation *or* falsification had to be a property of a theory *as a whole*, they had no way of unraveling this whole cloth."[14]

Thus Walsh (and before him, Quine's friend Morton White[15]) made the point that after Carnap's abandonment (between 1936 and 1939) of the picture of 'factual' sentences as capable of confrontation with sense experience one by one (which, was, as we have seen, just the traditional empiricist picture) and Quine's critique of the Logical Positivists' picture of what they called 'the language of science' as neatly divided into a 'factual' part and an 'analytic' part, *the whole argument for the classicl fact-value dichotomy was in ruins*, and that, "as far as logical empiricism could tell" science might presuppose values as well as experiences and conventions. Once we stop thinking of 'value' as synonymous with *ethics*, it is quite clear that it *does* presuppose values—it presupposes *epistemic* values.

Epistemic Values are Values too

The classical pragmatists, Peirce, James, Dewey and Mead, all held that value and normativity permeate *all* of experience. In the philosophy of science, what this point of view implied is that value-judgements are essential to the practice of science itself. But these

pragmatist philosophers did not refer only to the kind of value judgements that we call 'moral' or 'ethical': judgments of 'coherence', 'plausibility', 'reasonableness', 'simplicity', and of what Dirac famously called the 'beauty' of a hypothesis, are all value judgments in Charles Peirce's sense, judgements of what he called the 'admirable' in the way of (scientific) conduct.[16]

The Logical Positivists, however, could never admit that value-judgments of any kind are essential to cognition. Instead, they tried to evade the idea that science presupposes any values at all in different ways. Carnap's way was to try to show that science proceeds by a formal syntactic method. To put it very briefly, Carnap wanted to reduce theory choice to an *algorithm*. But the only algorithms he was able to devise were limited to very simple sampling problems (such as estimating the relative frequency of red balls in an urn given a sample of balls selected from the urn). Today no one holds out any hope for Carnap's project.[17]

I believe that it is obvious just what the Logical Positivists were shutting their eyes to, as so many today who refer to values as purely 'subjective' and science as purely 'objective' continue to shut their eyes: namely, the fact that judgments of coherence, simplicity (which is itself a whole bundle of different values, not just one 'parameter'), 'beauty', 'naturalness', etc., are pre-supposed by physical science. Yet *coherence* and *simplicity* and the like are *values*. Each and every one of the familiar arguments for non-cognitivism in ethics could be repeated without the slightest alteration in connection with these epistemic values; in particular, the argument that ethical values are not 'matters of fact' (because, we do not have a 'sense impression' of goodness) could be modified to read "epistemic values are not matters of fact because we do not have a sense impression of simplicity or a sense impression of coherence'.

Similarly, the Logical Positivists' argument that 'good' and the other value terms are 'non-cognitive' because these predicates do not appear in either the 'postulates' or the theorems of either physical or mathematical science (in the 'P-Postulates or the L-Postulates, in Carnap's jargon) could be modified to read that Carnap's beloved term 'confirmed' does not occur in the P-Postulates or the L-Postulates of 'the language of science' (in fact, this is why Carnap tried so hard to show it could be replaced by a purely *mathematical* notion[18]).

But the entanglement of facts and values is not limited to the sorts of facts that the Logical Positivists recognized on the one hand and epistemic values on the other. For the fact is that although the Logical Positivists thought that what they called 'the language of science' is the *whole* of 'cognitively meaningful' language, their view was profoundly wrong. In fact, it is self-refuting. It is self-refuting because their key philosophical terms *cognitively meaningful* and *nonsense* are neither observation terms nor 'theoretical terms' of a physical theory nor yet logical/mathematical terms, and these are the only kinds of terms that their 'language of science' was allowed to contain.[19] And if we look at the vocabulary of our language as a *whole*, and not the tiny part that was supposed by Logical Positivism to be sufficient for the description of 'facts', we will find a much deeper entanglement of fact and value (including ethical and aesthetic and every other sort of value) even at the level of individual predicates.

'Thick' Ethical Concepts

The sort of entanglement I have in mind becomes obvious when we study words like *cruel*. The word 'cruel' obviously—or at least it is obvious to most people, even if it is denied by some famous defenders of the fact- value dichotomy—has ethical uses. If you ask me what sort of person my child's teacher is, and I say "He is very cruel", I have both criticized him as a teacher and criticized him as a man. I do not have to add, "He is not a good teacher", or "He is not a good man". I might, of course, say, "*When he isn't displaying his cruelty, he is a very good teacher*", but I cannot simply, without distinguishing the respects in which or the occasions on which he is a good teacher and the respects in which or the occasions on which he is very cruel, say "He is a very cruel person and a very good teacher". Similarly, I cannot simply say, "He is a very cruel person and a good man" and be understood. Yet 'cruel' can also be used purely descriptively, as when a historian writes that a certain monarch was exceptionally cruel, or that the cruelties of the regime provoked a number of rebellions. 'Cruel' simply ignores the supposed 'fact-value dichotomy', and cheerfully allows itself to sometimes be used for a normative purpose and sometimes as a descriptive term. (The same is true of a host of other terms—e.g.,

'rude', 'insensitive', 'selfish', 'brave', 'fair', 'considerate', 'thoughtful'). In the literature, such concepts are often referred to as 'thick ethical concepts'.

The response which the non-cognitivist most often makes today is to claim that the thick ethical concepts are 'factorable' into a purely descriptive component and an 'attitudinal' component. The descriptive component is supposed to state the matter of fact that the predicate corresponds to, and the attitudinal component is supposed to express an 'attitude' (or an emotion or a volition) exactly as in non-cognitivist accounts of the function of 'good', 'ought', etc.

When it comes to the word 'cruel', Richard Hare is a philosopher who seems to favor a 'two-components' analysis. He recognizes, of course, that this word has been regarded as an example of what I am calling 'entanglement', but his description of what the proponents of entanglement believe is distorted by a curious projection of his own views onto his opponents, when he writes[20]:

> It is being suggested that this kind of action is somehow *inherently* motivational; if it did not motivate us in this way, or otherwise touch our feelings, it would not be *that* kind of action (not, for example, cruel). So there are properties which are in themselves evil, and moral words which are inseparably both descriptive and prescriptive.

As we shall see proponents of entanglement[21] *do not* maintain that evaluative words, either thick or thin, satisfy Hare's motivational requirement (which is, basically, that the words in question behave as emotivists claim they do, as expressions of actual motivation or emotion).

After describing the claim that a moral word can be "inseparably both descriptive and prescriptive" in this way, Hare goes on to rebut it. He replies that "the fact that *if* we use this word we are almost [sic] committed to the evaluation does not entail that we have got to use the word at all in order to describe the action fully. We can say, 'He was caused to suffer deeply', but add, 'all the same there was nothing wrong in it. . . .' Here Hare seems to suggest that the descriptive component of 'cruel' is "causing to suffer deeply" and the evaluative 'almost-implication' is "action which is wrong".

The whole idea of factorability has been, I believe, effectively criticized, both by myself[22] and by John McDowell[23] (and earlier by Iris Murdoch[24]). The attempt of non-cognitivists to split thick ethical concepts into a 'descriptive meaning component' and a 'prescriptive meaning component' founders on the impossibility of saying what the 'descriptive meaning' of, say, *cruel* is without using the word *cruel* itself or a synonym. For example, it certainly is not the case that the extension of 'cruel' ('setting the evaluation aside', as it were) is simply 'causing deep suffering', *nor*, as Hare himself should have noticed, is 'causes deep suffering' itself free of evaluative force. [*Suffering* does not just mean 'pain', nor does *deep* just mean 'a lot of']. Prior to the introduction of anesthesia at the end of the nineteenth century, any operation caused great pain, but the surgeons were not normally being *cruel*; and behaviour that does not cause obvious pain at all may be extremely cruel. (Imagine that a person debauches a young person with the deliberate aim of keeping them from fulfilling some great talent! Even if the victim never feels obvious pain, this may be an extremely cruel act.)

Another famous English philosopher, John Mackie, also considered the word *cruel*. He argued that the whole idea of value properties must be wrong, because of the 'queerness' that such properties would exhibit[25], and wrote:

> Another way of bringing out this queerness is to ask, about anything that is supposed to have some objective moral quality, how this is linked with its natural features. What is the connection between the *natural fact* that an action is a piece of deliberate cruelty—say causing pain just for fun—and the moral fact that it is wrong?. . . . It is not even sufficient to postulate a faculty which 'sees' the wrongness: something must be postulated which can see at once the *natural features that constitute the cruelty*, and the *wrongness*, and the *mysterious consequential link between the two.*"[26] [emphasis added]

Hare saw that thick ethical concepts pose a problem and tried to respond to it; Mackie was simply blind to the problem. For Mackie, 'cruel' (and presumably Hume's example 'crime') were just words which describe 'natural facts'. But *what sort* of 'natural facts'?

What is characteristic of 'negative' descriptions like 'cruel', as well as of 'positive' descriptions like 'brave', 'temperate', 'just' (note that these are the terms that Socrates keeps forcing his interlocutors to discuss again and again!) is that to use them with any discrimination one has to be able to identify imaginatively with an *evaluative point of view*. That is why someone who thought that 'brave'

simply means 'not afraid to risk life and limb' would not be able to understand the all-important distinction that Socrates keeps drawing between mere *rashness* or *foolhardiness* and genuine *bravery*. It is also the reason that (as Iris Murdoch stressed in a wonderful book titled *The Sovereignty of "Good"*) that it is always possible to *improve one's understanding* of a concept like 'bravery' or 'justice'. If one did not at *any* point feel the *appeal* of the relevant ethical point of view one wouldn't be able to acquire a thick ethical concept, and sophisticated use of it requires a continuing ability to identify (at least in imagination) with that point of view. But this dependence of even 'descriptive' uses of 'cruel' upon evaluation is what Mackie was *denying* when he referred to the fact that someone is cruel as simply a (metaphysically unproblematic) 'natural fact'.

As we saw, for the empiricists a 'fact' was, at bottom, simply something one could have a 'sense impression' of. As we also saw, this crude empiricist criterion was replaced in the twentieth century by the various versions of the Verifiability Theory of Meaning developed by the Logical Positivists. But the collapse of the Verifiability Theory of Meaning has not led to a demise of the dichotomy, even among professional philosophers. What it has led to is a change in the nature of the *arguments* offered for the dichotomy. Today it is defended more and more on *explicitly* metaphysical grounds. (The pretence that the dichotomy is just a matter of 'the logic of our language' has been given up.) At the same time, even the defenders of the dichotomy concede that the old arguments for the dichotomy were bad arguments.[27]

Mackie (who was attracted to a materialist metaphysics), tried to exploit a property that he claimed ethical judgments possess: namely, that one cannot make an ethical judgment, and mean it *as* a sincere ethical judgment, unless one thereby expresses an *actual* desire or preference. (As we saw, Richard Hare made the same assumption). Since descriptions of fact cannot, according to Mackie and Hare, be expressions of actual desires and preferences, it follows that ethical judgments are not descriptions of fact, q.e.d.

The origin of this supposed property of ethical judgments is clear: it comes from the older *emotivism* of the Logical Positivists! For the Logical Positivists and their emotivist followers expressing actual desires and preferences was the very 'function' of ethical judgments. But, as Elizabeth Anderson has remarked[28]:

> Boredom, weakness, apathy, self-contempt, despair and other motivational states can make a person fail to desire what she judges to be good or desire what she judges to be bad. This prevents the identification of value judgments with expressions of actual desires and preferences, as Hare insists.

The Difference it Makes

My aim in this lecture has been to destroy a metaphysical dichotomy that has, I believe deeply corrupted our practice as well as our thinking. To show how great a difference it makes if we treat ethical disagreements as Socrates thought we should, as disagreements that are only discussible, but as the disagreements which it is most important to discuss, would take a whole series of lectures, and not just a 'one night stand'. But I am sure the question which will come up immediately in the discussion following this lecture is, "by what criteria can we tell who is right when we have an ethical disagreement?" And to open the post-lecture discussion, instead of trying to summarize all the things I have been saying, I will just make three remarks:

1. In the course of a genuine inquiry, one which is provoked by a real problematical situation (to use a term of John Dewey's), we always bring to bear an immense stock of both valuations and descriptions which are not in question in *that* problematic situation. Pragmatists have taught us that any assumption can be questioned, but that that does not mean that *all* assumptions can be put in question in any one inquiry. We are never in the position, imagined by the positivists, of having a large stock of factual beliefs and no value judgments and having to decide whether our first value judgment is warranted. We are never in the position of having to infer our very first 'ought' from a whole lot of 'ises'.
2. We neither have nor need one single 'criterion' or 'decision method' for judging warranted assertability in ethics any more than we do in history or in economics or in literature or, for that matter, in science. Rather, what we need is, first, commitment to the ethical life itself, commitment, as a great and recently deceased French philosopher has said, to saying '*me voici*!', 'Here I am', 'I am willing to help', when faced with

the concrete suffering of another, and, second, as John Dewey said, we need 'the authority of intelligence, of criticism.' (Dewey once defined philosophy itself as 'criticism of criticisms'.)

3. If Dewey did not believe that inquiry requires 'criteria', in the sense of decision procedures, he did believe that there are some things that we have learned about inquiry from the conduct of inquiry. And what holds good for inquiry in general holds for value inquiry in particular.

Among the things that hold good for inquiry in general are the principles that inquiry which makes full use of human intelligence must not 'block the paths of inquiry' by preventing the raising of questions and objections, or obstructing the formulation of hypotheses and the criticism of the hypotheses of others. Inquiry in any area should avoid relations of hierarchy and dependence, for these always lead back to failed methods of inquiry—to the failed 'method of tenacity', the failed 'method of authority' and the failed 'method of what is agreeable to reason'. Rational inquiry in any area relies upon both the careful evaluation of experience and the invention of new descriptions of experience (and sometimes of new experiences). By appeal to these and similar standards we can often tell that views are irresponsibly defended in ethics and the law as well as in science. The right approach to our ethical problems is neither to give up on the very possibility of rational discussion nor to seek a metaphysical foundation outside of (or 'above') all contexts and problematic situations, but to investigate and discuss and try things out co-operatively, democratically, and above all *fallibilistically*. The terrible thing about the fact/value dichotomy is that by denying that there *is* such a thing as a responsible and rational ethical discussion, it 'blocks the path of inquiry' from the very start.

Notes

* Lecture delivered on 7 October 2002 under the auspices of Centre for Studies in Civilizations at India International Centre, New Delhi.

1. Lionel Robbins, *On the Nature and Significance of Economic Science* (London: Macmillan, 1932), p. 132.
2. This was pointed out some years ago by Elijah Milgram [ref].
3. Here I follow Milgram's analysis, referred to in the previous note.
4. Although Charles L. Stevenson, among others, interprets Hume as holding that value judgments are factual judgments, I believe that this is a mistake. According to Stevenson in *Facts and Values* (New Haven: Yale University Press, 1963), p. 11, Hume 'in effect' defines good as "approved by most people"; in his earlier *Ethics and Language* (Yale University Press, 1944), p. 276, Stevenson's formulation is that "Hume's manner of defining (sic) the moral terms makes such a statement as 'Anything is good if and only if the vast majority of people, on being fully and clearly informed about it, would have approbation for it' an analytic one". However, Hume sharply distinguishes between "a mistake of *fact* and one of *right*" in Appendix I to his *Enquiry concerning the Principles of Morals* (numbered section 241, in Selby-Bigge's edition). See L.A. Selby-Bigge (ed.), *Enquiries Concerning the Human Understanding and the Principles of Morals by David Hume* (Oxford: Clarendon Press, 1975), p. 290. This follows the section (numbered 237 by Selby-Bigge) in which Hume asks "where is that matter of fact that we call *crime*; point it out; determine the time of its existence; describe its essence or nature; explain the sense or faculty to which it discovers itself. It resides in the mind of the person who is ungrateful. He must, therefore, feel it and be conscious of it. But nothing is there except the passion of ill will or of absolute indifference. You cannot say that these, of themselves, always, and in all circumstances, are crimes. No, they are only crimes when directed towards persons who have before expressed and displayed good-will towards us. Consequently, we may infer, that the crime of ingratitude is not any particular *fact*, but arises from a complication of circumstances which being presented to the spectator excites the *sentiment* of blame, by the particular structure and fabric of his mind." (*op. cit.*, pp. 287–8. Emphasis in the original). Here, as the context merely makes clear, what holds of 'crime' is supposed to hold of 'virtue' and 'vice' in general: there is no matter of fact which is the virtuous or vicious character of an action. What misleads Stevenson is that Hume *also* holds that in fact the great majority of persons, if fully knowledgeable about the circumstances (and if they make a sufficient effort to view those circumstances impartially) will approve and disapprove of the same actions under the influence of 'the sentiment of humanity'. But this is not to say that the *idea* of a good action is the idea of an action that most people will approve of; if it were, then Hume could not say that there is no 'matter of fact' here.
5. As already pointed out, this reading of Hume is one I owe to Elijah Milgram.
6. The *locus classicus* for this version of the Logical Positivist account of ethics is chapter 17, "The Nature of Ethics", of Hans Reichenbach's *The Rise of Scientific Philosophy* (Berkeley and Los Angeles: The University of California Press, 1951).
7. Rudlof Carnap, *The Unity of Science* (London: Kegan Paul, Trench, Hubner & Co.; 1934) pp. 26–7.
8. *Ibid.*, p. 22.
9. Here Carnap was referring to the so-called 'early' Wittgenstein of the *Tractatus*.

10. Reichenbach an exception [complete note].
11. 'The Interpretation of Physical Calculi'.
12. Two Dogmas ref.
13. Me on Quine's tendency to regard math as synthetic in spite of himself.
14. Vivan Walsh, "Philosophy and Economics," in *The New Palgrave: A Dictionary of Economics*, vol. 3, ed. J. Eatwell, M. Milgte, and P. Newman (London: Macmillan Press [and New York: Stockton Press], 1987).
15. Morton White.
16. Peirce Hookway.
17. In fact, in this response to my "'Degree of Confirmation' and Inductive Logic", in *The Philosophy of Rudolf Carnap* (La Salle, III: Open Court, 1963), Carnap backs away significantly from the hopes for an algorithm that would enable us to reproduce the judgements of an ideal inductive judge he expressed in *Logical Foundations of Probability* (Chicago, University of Chicago Press, 1950), his only book length treatment of inductive logic. For a proof that Carnap's project could not do that, see the just-cited paper.
18. For a discussion, see my *Pragmatism and Moral Objectivity.*
19. For a fuller discussion of the self-refuting character of Logical Positivism, see my Herbert Spencer Lecture.
20. *Moral Thinking,* p. 72.
21. Such proponents have been around for a long time. Bernard reports that "The idea that it might be impossible to pick up an evaluative concept unless one shared its evaluative interest is basically a Wittgensteinian idea. I first heard it expressed by Phillippa Foot and Iris Murdoch in a seminar in the 1950s." Bernard Williams, *Ethics and the Limits of Philosophy* (Cambridge, MA: Harvard University Press, 1985).
22. Last chapter of *Reason, Truth and History.*
23. McDowell refs.
24. Iris Murdoch, *The Sovereignty of Good.*
25. I consider Mackie's 'queerness' argument in detail in "Pragmatism and Moral Objectivity".
26. J.L. Mackie, *Ethics; inventing right and wrong* (Harmondsworth: Penguin Books, 1978), p. 41.
27. Here I repeat a point I made in "Objectivity and the Science-Ethics Distinction", in M. Nussbaum and A.K. Sen (eds), *The Quality of Life* (Oxford: Clarendon Press, 1993), pp. 143–157. [Collected in my *Realism with a Human Face* (Cambridge, MA: Harvard University Press, 1990).
28. Elizabeth Anderson, *Value in Ethics and Economics* (Cambridge, MA: Harvard University Press, 1993).

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Towards the Emergence of Śaiva Siddhānta

Antiquity of Śaivism

The tradition of Śaivism* is as old as the Vedas, if not older than them. Some scholars are of the view that Śaivism is older than the Vedas. They maintain that the Mohanjodaro civilization reveals traces of Śiva worship. If it is accepted that the Mohanjodaro civilization is earlier than the Vedas and if the seals that have been discovered are identified as those relating to Śiva, then the worship of Śiva should have been prevalent even before the Vedic period. It means that Śaivism has a long history from pre-Vedic times down to the present day. It has flourished throughout India—in the north and the south, in the east and the west. It took shape as Pratyabhijñā in Kashmir; and so it is known as Kashmir Śaivism. In the south, particularly in Tamil Nadu, it is known as Śaiva Siddhānta. In the western part of south India, especially in Karnataka, it has blossomed as Vīra-Śaivism. There are important centres of Śaivism in Paśupatinath and Kedarnath in the north, Somanath in the west, and Banaras in the east and Rameswaram in the south. Without being confined to India, Śaivism spread to other countries. It is prevalent in Sri Lanka, Malaysia, and Singapore; and it has now spread to South Africa, USA, Canada, and England. The Tamil speaking communities in Sri Lanka, Malaysia, and Singapore are strong votaries of Śaivism.

Seed-bed of Śaivism

Śiva, the supreme Godhead of Śaivism, is identified with Rudra of the Vedic times. The identity of Rudra and Śiva is established on

the basis of the etymological meaning of the two terms "Rudra" and "Śiva". There are *Ṛg-vedic* hymns which speak of Rudra as one who bestows prosperity on the worshippers and also as one who destroys their suffering. It is true that there are hymns which convey a sense of fear and awe with regard to Rudra. For example, there is a hymn which says, "Slay not our men in your anger;"[1] "May the hero spare our horses;"[2] "May the bolt of Rudra avoid us; may the great malevolence of the powerful deity depart from us,"[3] and so on. We also come across hymns which seek Rudra's help for long life, offspring, and prosperity; and that is why he is propitiated in many hymns as the saviour God. It is not, therefore, surprising that Rudra who is associated with the twofold function of bestowing prosperity and removing suffering is identified with Śiva of the later period. The word "Rudra" etymologically means one who destroys suffering, the source of suffering, sins, etc. Rudra is so-called because he drives away suffering. The word "Śiva" etymologically means one who makes the sin thin, or who attenuates the sin or suffering. It must be borne in mind that happiness and misery are two sides of one and the same coin. The attainment of happiness implies the removal of misery; and the absence of misery suggests the presence of happiness. The twofold functions of Rudra/Śiva highlight both the aspects, viz. the bestowal of happiness on the worshippers and the removal of their suffering.

It is not only in the *Ṛg-veda*, but also in the *Yajur-veda* we come across passages addressed to Rudra. There were deviations and transgressions of the principles and practices of the Vedic rituals. The Śata-rudrīya hymn helps us to get a glimpse of the life of the people during the period of the *Yajur-veda*.[4] Rudra, during this period, becomes the God who punishes the wrong-doers. He is helped by his subordinates in the discharge of his duties; surprisingly, his subordinates are also called Rudras. The same trend continues in the *Atharva-veda*. There are hymns which suggest that the mode of warfare prevalent during the period of the *Atharva-veda* was more ferocious than in the previous periods. There was the need to find an all-powerful leader and merciful saviour of the worshippers. We are told that the special attendants of Rudra had long hairs, and so these special attendants who helped Rudra in his functions are called the Keśins. It may be mentioned here that the Keśins, who were the ascetics (munis) observed all kinds of austerities, and constituted a special class of people in the sense

that, without strictly following the well-established path of karma, they practised bhakti or devotion.[5] The impact of these ascetics on society must have been so enormous that many would have followed them. Since their followers struck a new path leaving the conventional one, they must have been viewed as heterodox or heretics. They were called Vrātyas. The *Atharva-veda* speaks of these Vrātyas as the worshippers of Rudra/Śiva.[6] A distinction is sought to be made between the munis and the Vrātyas. While the former worshipped any God, the latter worshipped only Rudra/Śiva. The point to be noted here is the emergence of bhakti as a mode of worship of God. The source of the bhakti tradition can be traced to the *Ṛg-vedic* period, and there was no time when bhakti was absent in the religio-philosophical life of the people.

The importance of Rudra as the supreme Godhead continued in the Brāhmaṇas. In addition to the portrayal of Rudra as a God of punishment, he was also presented as one who took care of his worshippers. Rudra was called Paśupati, the Lord of the cattle. The term "Paśupati" occurs both in the *Yajur-veda* and the *Atharva-veda*. The *Kauśītaki Brāhmaṇa* (6.1–9) uses eight names of Rudra; they are: Bhava, Śarva, Paśupati, Ugra, Mahādeva, Rudra, Īśāna, and Aśani. Also, this Brāhmaṇa does not make Rudra a terrific deity. The two aspects of Rudra were presented all the time, and it is possible to account for both of them. While those who followed the *Śatapatha Brāhmaṇa* emphasized more the terrible aspect of Rudra, those who relied on the hymns and Brāhmaṇas of the *Atharva-veda* highlighted more the benign aspect of Rudra. Commenting on this difference, C.V. Narayana Ayyar observes:

> There is a marked difference in tone between the simple, unambiguous, straight-forward appeals which were addressed to the gods by Vedic hymners, and the queer, far-fetched, and fantastic theories put forth dogmatically by the authors of the Brāhmaṇas. These last undoubtedly held the Vedas in great esteem, but they did not comprehend them. They magnified the importance of the outward form of Brāhmaṇical rituals, introduced innumerable meaningless details, and by the variety and the complexity of their religious practices, more or less effectually shut out their truth and inner significance. This they did because of their ignorance. Thus they could not help regarding gods as veritable powers of evil who must be coaxed, cajoled, and flattered if they were to be rendered harmless. Rudra's attributes as reflected in the Vedas admitted of the

possibility of such a distortion. That was why the authors of the Brāhmaṇas imagined Rudra to be such a fierce deity that they were even afraid of mentioning his name. But this conception of Rudra got changed when the Upaniṣads came to be written.[7]

3. Śaivism in the Upaniṣads

The transition from the Mantras and the Brāhmaṇas to the Upaniṣads marks a breakthrough in philosophical speculation. The symbolic representation of the ultimate reality in its manifold forms is replaced by philosophical presentation of the truth of monism without prejudice to pluralism and polytheism. The esoteric language through which the nature of gods was conveyed in the Mantras is absent in the Upaniṣads, which focus on Brahman or Ātman as the central reality in terms of which the nature of man and the world is conveyed in ordinary language. The emphasis on the rituals which one notices in the Brāhmaṇas is again absent in the Upaniṣads. It is true that there is reference to the Vedic gods such as Indra, Varuṇa, Soma, Rudra, and so on in some of the Upaniṣads. Rudra who occupied an important place in the Brāhmaṇas is not at all mentioned in some of the Upaniṣads. For example, the *Taittirīya Upaniṣad* does not speak about the Vedic gods. It appears as it were that the Upaniṣadic seers ignored the importance of the Vedic gods. The Upaniṣads tell us that Brahman is the source and support of the entire manifested world. The Vedic gods such as Vāyu, Sūrya, Mṛtyu, and so on did their work, so we are told, through the fear of Brahman.[8] While the Vedic sacrifices are conducive to the attainment of worldly prosperity and heaven, the knowledge of Brahman/Ātman leads to liberation, which is the highest end (*puruṣārtha*) to be attained by human beings. Not that the Vedic rituals were ignored; on the contrary, while emphasizing the importance of the rituals, the Upaniṣads bring out their limitations vis-à-vis the knowledge of Brahman/Ātman. For example, the *Muṇḍaka Upaniṣad* says: "The Self (Ātman) is not to be obtained by instruction, nor by intellect, nor by much learning. He is to be attained only by one whom the Ātman chooses; to such a one the Ātman reveals itself."[9] In other words, this Upaniṣadic text implicitly brings out the importance of divine grace. It may be mentioned here that a text of the *Kaṭha Upaniṣad* speaks

about divine grace (*prasāda*). In addition to karma, both knowledge and grace have been highlighted as the means to liberation. The *Śvetāśvatara Upaniṣad* may be taken to be a representative of this mode of thinking generally prevalent in the the Upaniṣadic texts. There are many passages in this Upaniṣad which speak about the supreme Lord as the support of both the jīva and the world. For example, there is a text which says:

> That which is joined together as perishable and imperishable, as manifest and unmanifest—the Lord supports it all. Now without the Lord, the Ātman is bound, because it is an enjoyer; by knowing the Lord (Deva), one is liberated from all fetters. There are two unborn ones; the knowing Lord and the ignorant soul, the omnipotent and the helpless.[10]

This Upaniṣad also introduces Rudra, the well-known God of the Brāhmaṇas, as the one who is the source and support of the entire universe. The passage reads:

> He, the protector, after creating all beings, merges them together at the end of time. Having an eye on every side and a face on every side, having an arm on every side and a foot on every side, the one God faces together with hands, with wings, creating heaven and earth—he who is the source and origin of the gods, the ruler of all, Rudra, the great seer, who of old created Hiraṇyagarbha—may he endow us with clear intellect.[11]

It may be mentioned that Rudra of the Upaniṣad is not different from the Rudra of the Mantras and the Brāhmaṇas. Even though there were many Vedic gods, why is it, one may wonder, that Rudra alone has been given the exalted status of Godhead? Narayana Ayyar suggests as many as five reasons for the supremacy given to Rudra/Śiva in the Upaniṣad.[12] First, even though many gods have been spoken of in the Mantras and the Brāhmaṇas, Rudra alone performed the important functions of preservation and destruction. It is not unnatural for any human being to pray to God for protection as well as for the removal of hindrances coming from others. Since the Vedic god, Rudra, performed both these functions, the Upaniṣadic seer looked upon Rudra as the Godhead worthy of knowing and adoration. Secondly, unlike other Vedic gods, Rudra could be worshipped by all castes. This is obvious from the name, Paśupati, given to Rudra/ Śiva. The term "Paśupati" means the Lord of the cattle. It means that everyone can look to Rudra for

preservation and protection. Thirdly, Rudra is the one god who took care of the needs of the people belonging to all the four castes (varṇas). Fourthly, even those who, for some reason or other, deviated from the Vedic rituals must be taken care of. Reference has already been made to the emergence of munis and Vrātyas during the period of the Brāhmaṇas. The interests of these people should be equally guarded. Fifthly, people were attracted towards a god who is associated with awe and terror, because fear is at the bottom of all worship.

That the worship of Śiva gained importance is evident in some of the later Upaniṣads. For example the *Maitrī Upaniṣad,* 7.8, speaks about different kinds of people—dignified and degraded, genuine and spurious, who are worthy of heaven and who are not worthy of it—who worshipped Śiva. It says :

> . . . there are those who are always hilarious, always abroad, always begging, always making a living by handicraft. There are others who are beggars in town, who perform sacrifices for the unworthy. . . and others there are who are wicked, who wear their hair in a twisted knot, who are dancers, who are mercenaries, travelling mendicants, actors. . . Also there are those who love to distract the believers in the Veda by the jugglery of false arguments, comparisons, and paralogisms, with these one should not associate. These people, evidently, are thieves and unworthy of heaven. . .

It may be noted that there was also the trend to worship Brahman in the form of the trinity, Brahmā, Viṣṇu, and Rudra; and this opened the way for the worship of the chosen form of the Godhead. Also, there was a liberal application of the *Gāyatrī Mantra* to many gods with suitable modification for the purpose of meditation. The manifold changes that took place in the practice of devotion and worship during the Upaniṣadic period had a tremendous impact on the development of the bhakti tradition. There was, first of all, a recognition of the importance of initiation for the worship of any chosen god, be it Śiva or Viṣṇu, Gaṇeśa or Subrahmaṇya. Initiation would not only regularize the mode of worship, but also would give a sense of assurance to the devotees. Secondly, the work of initiation could be done only by those who are adepts worthy of respect and emulation by others; and this paved the way for the emergence of the concept of guru. The worship of many gods must necessarily result in the emergence and formation of many worship—groups, each of which requiring gurus

to guide the followers. The author of the *Śvetāśvatara Upaniṣad* must have been one such guru, for the Upaniṣad says:

> By the power of austerity and the grace of God, the wise Śvetāśvatara in proper manner spoke about Brahman, the supreme, the pure, to the advanced ascetics, what is pleasing to the company of seers.[13]

The method of initiation and the emergence of guru led to a third important development in the devotional practices of the followers of a particular tradition. When there is a large number of followers in any religious group, there is the need for codification of the practices by the leaders or gurus whose authority is accepted by the followers. It is no doubt true that for sometime the regulations governing the practices of worship were transmitted orally from one generation to another generation; and what is thus transmitted becomes a tradition, both authoritative and trustworthy. Like the emergence of the smṛti tradition, the tradition governing the principles and practices of the worship of different gods also emerged. Even though many gods were worshipped, all of them could be reduced to three broad divisions, viz. Śiva, Viṣṇu, and Śakti. These traditional practices, when codified, were called Āgamas; and so there are, broadly speaking, three kinds of Āgamas—Śaiva Āgamas, Vaiṣṇava Āgamas, and Śākta Āgamas. Finally, there was one more development. The majority of the people, whose mental frame was not highly developed to meditate on any of these gods, required some visible and tangible object representing or symbolizing the chosen god of worship. In order to help them in their worship, the leaders or gurus of the respective religious groups provided them with the images, or symbols, or icons, so that they could worship them by offering incense, flowers, and fruits, and other offerings. It must be noted that, though the visible and tangible object to an outsider might appear as no more than a symbol or representative of the chosen god, to the worshipper himself/herself the visible object of worship is God itself, holy and sacred. The image of a particular God would have the special features associated with the chosen God; for example, there will be *śaṅkha* and *cakra* in the hands of the image representing Viṣṇu, a *spear* usually adorns one of the hands of Subrahmaṇya, and so on. Śiva is represented by the image of liṅga. The different kinds of Āgamas were treated as authoritative as the Vedas themselves.

4. Symbol of Śiva-liṅga

A brief explanation of the symbol of liṅga for Śiva is necessary at this stage. There is a view which identifies the phallus with Śiva-liṅga suggesting that the worship of liṅga is the worship of the phallus. Competent scholars point out that there is no justification for such an identification. Even if it is conceded that some tribal communities worshipped the phallus, it does not follow that the symbol of liṅga represented the phallus. If one tries to understand the nature of Śiva as portrayed in the Vedic literature, particularly in the Upaniṣads, one can easily understand why liṅga has been made use of as the symbol of Śiva. The word "liṅga" has been used to refer to the cosmic Puruṣa. A text of the *Kaṭha Upaniṣad*[14] describes the cosmic Puruṣa as "*aliṅga*" in the sense that it does not have any distinguishing mark or characteristic. The *Śvetāśvatara Upaniṣad*[15] also describes the supreme reality in the same way. Rudra/Śiva who is infinite, who is the source and support of everything, who is immanent in everything, and who also transcends everything is inconceivable. What possesses distinguishing marks can be conceptualized, i.e. what can be conceptualized must have a form and a name. But what cannot be conceptualized cannot be represented by any image characterized by identifying features. Since the need was felt for finding an image for the worship of the chosen God, liṅga was thought of as the most appropriate symbol or image of Śiva who cannot really be symbolized or represented by an image. While other gods such as Brahmā or Viṣṇu can be represented by an image with identifying features, Śiva, so the devotees of Śiva thought, cannot be represented by a symbol or image, because he is formless as well as all-formed. Consider, for example, the description of the cosmic Person in the oft-quoted *Puruṣa-sūkta,* which says: "The Puruṣa has a thousand heads, a thousand eyes, a thousand feet. . . It has a hand and foot on every side, an eye on every side, head and face on every side, an ear everywhere in the world." It may be noted that such a description occurs also in the *Śvetāśvatara Upaniṣad.*[16]

> He who is in the faces, heads, and necks of all, who dwells in the cave (of the heart) of all beings, who is all-pervading, He is the Lord and therefore the omnipresent Śiva. . . .
>
> The Person has a thousand heads, a thousand eyes, a thousand feet. He surrounds the earth on all sides and stands ten fingers' breadth beyond. The Person is truly this whole world, whatever has been and whatever will be. He is also the Lord of immortality, and whatever grows up by food. On every side it has a hand and a foot, on every side an eye, a head, and a face. It has an ear everywhere. It stands encompassing all in the world.

It means that the cosmic Person, who is the supreme reality spoken of as Rudra/Śiva, is all-formed and therefore formless. It is this double aspect of the supreme reality that is sought to be conveyed by the symbol of liṅga. To quote Narayana Ayyar:[17]

> The hemispherical top of the Śiva-liṅga consists in reality of thousands of heads, each of the size of a point. The sides of the cylindrical figure are equally true representations of the thousands of eyes, hands, and faces. The circular bottom is similarly representative of a thousand feet; the semicircular top, resembling the visible horizon, is truly symbolical of the universe which surrounds the earth on all sides. Though the image has thousands of hands, feet and eyes, it still has no foot or hand or eye or ear. Thus the Śiva-liṅga is the closest possible approximation to the cosmic Puruṣa with whom Maheśvara was identified by the devotees of Śiva. This explanation is borne out by several passages in the *Liṅga-purāṇa:*[18] e.g.
>
> *aliṅgo liṅga mūlaṁ tu avyaktaṁ liṅgaṁ ucyate,*
> *aliṅgaâ śiva ity-ukto liṅgaṁ śaivam iti smṛtam.*

The Śaiva Siddhānta tradition has further elaborated the concept of Śiva with form and without form. Instead of stopping with the two dimensions of Śiva, it adds one more. The Siddhāntin holds that Śiva is without form, with form, and with and without form. On a superficial view, such a position seems to be a bundle of contradictions. How is it possible, one may ask, that one and the same entity be endowed with form and also remain formless? The Siddhāntin holds that Śiva's form is a form of grace and that its manifestations, therefore, differ according to circumstances. There is the well-known distinction between transcendence and immanence of God accepted by all theistic systems. When it is said that Śiva is formless, it is for the purpose of emphasizing the transcendence of God. At the same time, Śiva is said to have forms which he assumes for the benefit of the jīvas. Of these forms, one

represents, according to the Siddhāntin, enjoyment—and this is the form of Umā-Maheśvara; there is another form which is symbolic of his anger or wrath, and this is Kāmāri form to punish the wrong-doers and prevent the accumulation of sin; there is yet another form which is in yogic meditation revealing peace and tranquillity; and this is the form of Dakṣiṇāmūrti to teach the jīvas the means to release. Also, there is the male-female form of Śiva, which has been a source of great inspiration to the devotees of Śiva, and it is the Ardha-nārīśvara form which combines Śiva and Śakti. Commenting on this dual form of Śiva-Śakti, V.A. Devasenapathy observes:[19]

> It is God's will that living beings should enjoy life as male and female and learn the lessons of unselfishness. The self-effacement of the male for the female and *vice versa* is seen not only among human beings but also among animals and birds. Thus, through what may appear to be a narrow attachment, the lesson of unselfish, universal love is learnt. "Verily is the husband dear to the wife, not because of the husband but because of the self." Perhaps, it was to reveal this truth that, when Appar wanted to go to Kailas and was unable to complete the pilgrimage on account of the weakness of his flesh despite the willingness of his spirit, Śiva granted him a vision. Appar was asked to bathe in a tank nearby and when he emerged from the tank, he found himself in Tiruvaiyaru, where birds and animals came into his view in pairs. The saint saw in them Śiva and his Śakti, the Lord and his grace.

One more form of Śiva, which is at once both majestic and beautiful, is the form of Naṭarāja, the divine Dancer. The Siddhānta tradition highlights the significance of this form of Śiva. It is said that the purpose of this dance of Śiva is to enable the souls, who are caught in the wheel of birth and death, to attain their release. The form of Naṭarāja is rich in significance from the aesthetic, ethical, and metaphysical points of view. It symbolizes in a concrete form the fivefold functions of Śiva, viz. creation, maintenance, destruction, obscuration, and bestowal of grace. All these functions are performed by Śiva for the upliftment of the jīvas. One hand of Naṭarāja, which holds the small drum, suggests creation; another hand of his which assures protection signifies maintenance; the hand that holds the fire indicates destruction of the malas or impurities which overwhelm the jīvas; the Lord's foot which is firmly planted represents obscuration; and the foot that is lifted up suggests grace and release. The form of Naṭarāja is unique; there is nothing comparable to this form in any

philosophical-religious tradition which attaches importance to the forms of God. We have already said that the image of Śiva-liṅga brings out the nature of God with and without form. When we view the liṅga as a mere mark, "not identifiable with any figure, male or female, human or non-human, it is symbolic of the formless aspect. To the extent it serves as a mark, it may be considered to be a form. Thus in the Śiva-liṅga we have an indication that God is with and without a form."[20] It may be noted that the supreme Godhead in its essential nature is formless and that the many forms it assumes is the result of its self-determination.

5. Śaivism in the Epics

Śaivism which has its roots in the Vedic period further developed during the epic period. We find a number of evidences in the *Mahābhārata,* which show the prevalence of Śaivism in the different parts of India. For example, there is reference to the Tīrthas in the east, south, west, and north of the Kuru Pāṇcāla kingdom, where the worship of Śiva was prevalent.[21] In the southern region also, there are, it has been stated, holy places located on the banks of the sacred rivers such as Godāvarī, Payoṣṇī (Pūrṇā), Mahānadī, Kāverī, Tāmraparṇī, and so on. There is not only specific reference to the regions/peoples such as the Drāviḍas, Keralas, Karṇāṭakas, Kuntalas, Koṅkanas, and so on, but also to the *Śiva-kṣetras* such as Gokarṇa and Kanyakumari. It is, therefore, clear that, without being confined to the north, Śaivism spread to the south. The prevalence of Śaivism in the south is supported by the *Tolkāppiyam,* the earliest known Tamil literature.

6. Śaivism in the *Tolkāppiyam*

A careful study of the *Tolkāppiyam* reveals to us that the Tamils worshipped not only their regional gods, but also the Vedic gods such as Indra, Varuṇa, Soma, and others. For example, "Māyon" is Kṛṣṇa, "Sēyon" is Subrahmaṇya, and "Veḍan" is Indra/Varuṇa.[22] Corresponding to Rudra/Śiva who is the mountain-god of the northerners, the Tamils had Muruga or Subrahmaṇya as the god of the mountains. Though the worship of Subrahmaṇya was

unknown in the Vedic times, Agni and Vāyu have been mentioned as the servants of Indra, who was otherwise known as Subrahmaṇya.[23] There are no specific hymns addressed to him. However, during the epic period, we come across references to the birth of Kārtikeya, who is also known as Subrahmaṇya. There are scholars who are of the view that the worship of Subrahmaṇya was the result of Rudra/Śiva worship. It may be noted that not only Śaivism, but also Vaiṣṇavism, spread to the south. If Subrahmaṇya is Sēyon, the red god, Viṣṇu is Māyon, the blue god. The Saṅgam writings show that the Vedic sacrifices were also prevalent in the Tamil region. The prevalence of the worship of the Vedic gods on the one hand, and of the Vedic practices of sacrifices and oblations on the other, shows in unmistakable terms the impact of the Vedic and the Purāṇic traditions on the south. There must have been from time to time migration of the people, particularly the householders and sannyāsins, to the south. For example, the *Tolkāppiyam* (sūtra 26) refers to the three higher classes, viz. the Brāhmaṇas, Kṣatriyas, and Vaiśyas. It also refers to the Vedic scriptures.[24] The description of gods such as Śiva, Viṣṇu, Balarāma, and Subrahmaṇya reminds us of the description of them contained in the Purāṇas.[25] In one of the *Puṟām* texts, a Brahmin who performs a sacrifice is praised, and this shows that the Vedic ritualism was not viewed as incompatible with Śaivism.[26]

That the Tamils worshipped not only the regional gods, but also Śiva and Viṣṇu, is clearly brought out in the two great Tamil epics, *Śilappadikāram* and *Maṇimēkalai*, which were composed during the last quarter of the second century AD. Both Śiva and Viṣṇu received equal respect along with the local gods. For example, it is stated in the *Śilappadikāram* that Seṅguṭṭavan worshipped both Śiva and Viṣṇu.[27] The King, we are told, wore Śiva's feet on his head and Viṣṇu's garland round his neck; and the worship of these Vedic gods was without prejudice to the worship of the family gods. A careful reading of this Epic reveals to us that there was religious harmony in respect of both the worship of gods and the observance of religious practices among the people including the king and the elite. The other epic, *Maṇimēkalai*, narrates how Maṇimēkalai was keenly interested in knowing the religio-philosophical views that were prevalent at that time. The Epic records that Maṇimēkalai listened to the doctrines of those who follow the path of the Veda, those who advocate Śaivism, the views of those who worship Brahmā and Viṣṇu, those who are specialized in logic and epistemology (*aḷavai*), the views of the Ājīvakas and Nirgranthas, the doctrines of the Sāṅkhyas and the Vaiśeṣikas, and finally the doctrines of the Buddhists.[28] Of these, she accepted the last and rejected the others.

7. Śaiva Āgamas

Earlier, reference was made to the emergence of a genre of books called the Āgamas. It is necessary to give a brief account of the Āgamas before we go into the development of Śaivism during the period of the Nāyaṇārs. Though there were many Vedic gods who gained importance one after another from time to time, there finally emerged three important religious traditions, viz. Śaiva, Vaiṣṇava, and Śākta. For the purpose of systematizing and regulating the worship among the followers of these three traditions, there came into existence three kinds of Āgamas relating to these traditions. Tradition holds that there are one hundred and eight Śaiva Āgamas, twenty-eight Vaiṣṇava Āgamas, and seventy-seven Śākta Āgamas. The status and importance of the Vedas and the Āgamas as sources of authority have been controversial. While some traditionalists give importance to the Vedic literature as the basic source of authority in philosophy and religion, others give equal importance to both the Vedas and the Āgamas, holding them to be the word of God. There is also a third view according to which the Āgamas are more authoritative than the Vedas. This controversy apart, there is also difficulty in fixing the date of the Āgamas. As for the Śaiva Āgamas, the view that is generally held by the votaries of the Śaiva tradition is that they must be assigned to a period earlier than fifth–sixth century AD. It is not necessary here to go into these controversial issues since our interest is now to trace the development of Śaivism. The Tamil Śaiva tradition known as Śaiva Siddhānta relies on twenty-eight Āgamas of which ten are said to be "God-taught" and eighteen are said to be "man-realized". While the first ten are regarded as root Āgamas, the rest of them, though equally authoritative on account of their divine source, are characterized as man-realized. The Śaiva Siddhānta tradition claims that, while it is difficult to comprehend the teaching of the Vedas, it is easy to follow the teachings of the Āgamas, which are presented in a clear and easy way to be understood by spiritually oriented and morally

chastened persons. Just as every Veda consists of four parts, viz. Mantra, Brāhmaṇa, Āraṇyaka, and Upaniṣad, even so every Āgama consists of four parts, viz. Jñāna-kāṇḍa, Yoga-kāṇḍa, Kriyā-kāṇḍa, and Caryā-kāṇḍa. Of these, Jñāna-kāṇḍa lays emphasis on the importance of knowledge as the means to God-realization; the Yoga-kāṇḍa is mainly concerned with the technique of concentration; the third one gives information about the construction of temples, the consecration of images, etc., and the last one deals with the different methods of worship. In short, while the first two are mainly philosophical and psychological, the last two focus on all kinds of ritual practices.

8. The Āgamic-Tamil Foundation of Śaivism

Tirumūlar's *Tirumandiram* composed during the sixth century AD, serves as the bridge between Vedic and Āgamic tradition on the one hand, and the Śaiva tradition in Tamil Nadu on the other. There is no other work during this period comparable to the *Tirumandiram* in its classical strength, scholastic achievement, philosophical analysis, and yogic discipline. It covers a wide range of topics—the theory and practice of the Āgamas, the mythologies of the Purāṇas, the six Vedic systems of philosophy, the importance of the temples and the methods of worship, the greatness of the Aḍiyārs and the value of *Śiva-bhakti*, acquaintance with the Tamil classics and polity; and it provides, at the same time, a solid foundation for the philosophy of Śaiva Siddhānta. Excepting that Tirumūlar came from the North and then returned to the North after completing his mission in Tamil Nadu, we do not know anything about his real life. The traditional story that he got into the body of the cowherd Mūla whose death was bemoaned by the cattle around him and took back the cattle to the home of Mūla, is no doubt fascinating, but we do not have any evidence in support of it excepting what is said in the *Periya-purāṇam*. According to the tradition, he came down to the south in order to see the sage, Agastya, who was living on the Podiyil hills, and passed through Kedāra, Nepal, the Vindhyas, Kāḷahasti, Kāñcī, and other places, and then reached the banks of the Kāverī. Relying upon Upamanyu's *Bhakta-vilāsa*, which is still not available in print, Sēkkiḷar has narrated the life history of Tirumūlar in the *Periya-purāṇam*.[29] The essentials of the Veda have

been set forth in the Āgamas, which are also significantly called Āgamānta. The Pratyabhijñā system, popularly known as Kashmir Śaivism, was prevalent in the valley of Kashmir long before Jainism and Buddhism made their advent. The philosophy enshrined in the Āgamas subsequently moved to western and southern parts of India. In western India, it goes by the name of Vīra-Śaivism, and in Tamil Nadu it is called Śaiva Siddhānta. Scholars are of the view that the Āgama philosophy and practice were prevalent in the south before the advent of the great Nāyaṇmārs such as Appar, Sambandhar, Sundarar, and others. However, we do not have any work other than the *Tirumandiram* available to us, which conveys the teachings of the Āgamas.

It was Tirumūlar who for the first time brings out in Tamil the philosophical doctrines as well as yogic and devotional practices contained in the Āgamas. The study of the *Tirumandiram* shows that its author must have lived later than the authors who composed the Sūtra-works of the six Vedic systems of philosophy, because he criticizes some of these systems in the fifth Tantra of his book. Since he praises the Pattini-cult in the second Tantra, he must have lived after Seṅguṭṭavan who constructed the temple for the worship of Pattini. The great Cōḷa King, Kōcceṅgan, it is said, constructed as many as seventy temples, and the time when Tirumūlar lived was one when there were quite a few temples. Tirumūlar speaks about the five Tamil *maṇḍalas*. The term "maṇḍala" means an independent kingdom. It appears that, when Tirumūlar lived in Tamil Nadu, there were five kingdoms in south India where Tamil was spoken.[30] Narayana Ayyar is of the view that the five maṇḍalas referred to by Tirumūlar were Cōḷa Maṇḍalas, Cēra Maṇḍalas, Pāṇḍya Maṇḍalas, Toṇḍai Maṇḍalas, and Koṅgu Maṇḍalas.[31] The formation of the Koṅgu Maṇḍala must have taken place by fourth century AD. So in all probability Tirumūlar must have lived between the fourth century and sixth century AD.

It is difficult to summarize in a short paper the teachings of the *Tirumandiram*. There are nine Tantras in this work. A cursory reading of this work will not help the reader to see the development of ideas or the interconnection among the chapters in the work. However, it will be possible to indicate the focus of each chapter. The first Tantra is mainly concerned with the ethical principles which regulate the human life, individual as well as social. The second Tantra deals with the Śaiva legends contained in the Purāṇas

and the Itihāsas. The way in which Tirumūlar brings out the esoteric meaning of these legends which, on the surface, look ridiculous to the rational mind deserves proper attention. In the third Tantra, Tirumūlar expounds at great length the yoga discipline. Though he starts with the Pātañjala-yoga, he gives a new interpretation for each one of the eight limbs on the basis of his own personal experience. In other words, this Tantra gives an insight into the theory and practice of the yoga discipline as conceived by Tirumūlar. In the next Tantra, Tirumūlar deals with the *upāsanā-mārga* in which the application of mantra plays an important part. The fifth Tantra is important for Śaiva Siddhānta. It elucidates the different forms of Śaivism as well as the disciplinary paths for attaining the goal of liberation. Though the sixth Tantra does not contain any hard-core philosophy, it is nevertheless important as it highlights the role and significance of seeing Śiva as the guru (*Śiva-guru-darśana*). In the seventh Tantra, Tirumūlar deals with the *kuṇḍalinī-śakti* in the context of the six *cakras*. Also, he discusses the problem of microcosm and macrocosm, i.e. the problem of the individual and the world, through a marvellous description of the six liṅgas such as aṇḍa-liṅga, piṇḍa-liṅga, and so on. This Tantra is also important as it contains a description of the exceptionally great Aḍiyārs. Like the fifth Tantra, the eighth Tantra is also important for the philosophy of Śaiva Siddhānta. It will not be an exaggeration to say that this chapter contains the basic teachings of Śaiva Siddhānta vis-à-vis the doctrines of other schools. The last Tantra discusses the importance of Praṇava and *pañcākṣara*, the different kinds of divine dances, and the state of liberation.

It will be of interest to make a brief reference to the way in which Tirumūlar brings out the esoteric significance of some of the Śaiva legends in such a way that even a rationally biased critical mind will be inclined to understand and appreciate what the legends intend to convey. For example, there is a legend which describes the way in which Śiva destroyed the "three cities". Tirumūlar tells us that the three cities stand for the three malas which bind the jīvas, and it is only through the power (śakti) of Śiva that it is possible to destroy the triple bonds of the jīvas. One who takes care to understand the esoteric meaning of this famous legend following the interpretation given by Tiruṃūlar will not certainly dismiss it as nothing more than a bed-time story to be told to children. There is again the legend that Śiva exhorted the sage Agastya to go to the

south in order to "balance" the weight of the earth. Tirumūlar's interpretation of this legend highlights the model role that a great sage like Agastya, an expert in the yoga of *kuṇḍalinī-śakti*, could play in shaping the lives of the people. The expression "*naḍuvu nilaimai*" (tranquillity or balance) does not mean the balance of the earth, for it is obvious that a person, however strong and weighty he may be, cannot keep the weight of the earth even. On the contrary, it means tranquillity or evenness of mind without being swayed by the forces of pleasure and pain, desire and aversion, and so on. According to Tirumūlar, Agastya is the "shining light" in the sense that the internal light of Agni which is rooted in the *mūlādhāra* should be allowed to manifest for balancing the forces of life. In other words, Agastya, as interpreted by Tirumūlar, is a shining model for spiritual transcendence. Again, the demythologizing of the legend of Śiva drinking the poison attempted by Tirumūlar not only makes the story meaningful, but also strengthens the doctrinal side of Śaiva Siddhānta. Tirumūlar says that people do not know the real meaning of Śiva's throat becoming blue. The poison in the story, which made Śiva's throat blue, symbolizes the world of suffering. The Upaniṣads describe the primal Being, variously described as Brahman, Śiva, Rudra, and so on as the source, support, and end of the manifested world. It means that the world gets back to the source from which it came. Figuratively speaking, Brahman swallows the world. That is why Śiva is referred to as Viśvagrāsa. In one of the verses, Tirumūlar says that Śiva, the primal Being, swallowed the jīvātman, Paramātman (the functional Śiva) and the entire universe of sentient and insentient beings, and sustained them (by keeping them in his throat).[32] Following Tirumūlar, the Siddhānta tradition refers to the blue-throated Śiva as the symbol of Adhomukha-Śiva, i.e. downward looking Śiva.

Tirumūlar's analysis of some of the concepts of Śaivism has contributed a lot to the development of the philosophy of Śaiva Siddhānta. For example, his threefold classification of the jīvas into *vijñānakalas, sakalas,* and *praḷayākalas* has become a basic doctrine of Śaiva Siddhānta. For the first time, Tirumūlar mentions four forms of Śaivism—Śuddha-Śaivam, Aśuddha-Śaivam, Mārga-Śaivam, and Kaḍum Śuddha-Śaivam. While he favours the first and the third, he downgrades the second variety. It is obvious that the fourth variety of Śaivism, "severe pure Śaivam", as the very name indicates, can be followed only by a few, who are extra-ordinary, because it

involves extra-ordinary devotion and rigorous discipline as exemplified by some of the Nāyaṇmārs, for example, Kaṇṇappar.

Again, Tirumūlar explains the role of caryā, kriyā, jñāna, and yoga in the scheme of discipline leading to liberation. He attached the greatest importance to caryā as it is the life, the essence, of Śuddha-Śaivam. He goes to the extent of saying that it comprises the remaining paths such that it can be characterized as four-in-one. There is, that is to say, caryā in caryā, kriyā in caryā, yoga in caryā, and jñāna in caryā. His elucidation of *sanmārga* with its three dimensions, viz. *sakhā-mārga* (in which God is viewed as a friend), *satputra-mārga* (in which God is portrayed as a parent), and *dāsa-mārga* (in which God is conceived as a master) has been followed by the preceptors of Śaiva Siddhānta. It may be mentioned here that Tirumūlar's *Tirumandiram*, which explains some of the doctrines and practices of Śaivism vis-à-vis those of other schools, prior to the emergence of the hymnal literature of Sambandhar, Appar, and others, has become a source book of Śaiva Siddhānta. Though his teachings are comprehensive enough to accommodate the teachings of the Āgamas and the Purāṇas on the one hand, and the doctrines of Śaivism and yogic and devotional practices with a special emphasis on *sanmārga* on the other, it will be appropriate to characterize his philosophy as Vedānta Siddhānta. To attain Śiva and become Śiva is, according to him, Vedānta Siddhānta. Tāyumāṇavar and others who are the ardent followers of this tradition speak very highly of the Vedānta Siddhānta taught by Tirumūlar.

What stands prominent in the case of Tirumūlar is his philosophical theory and practice, and not his personal life about which we do not know much. When we turn from Tirumūlar to the four Samayācāryas, viz. Sambandhar, Appar, Sundarar, and Māṇikkavācagar, we see an entirely different picture. In the case of the latter, the great miracles associated with them inspired the devotees of all kinds, high and low, literate and illiterate. From this, one should not draw the conclusion that the hymns of the Samayācāryas do not contain explanation of philosophical doctrines and devotional practices and that they have not contributed to the development of the doctrinal side of Śaivism. The truth is that they did as much as Tirumūlar's *Tirumandiram* has done. Nevertheless, the miracles performed by them are in the forefront when we narrate their life history.

9. Nāyaṇmārs

There was phenomenal growth in Śaivism both in form and content during the period of the Śaiva Nāyaṇmārs, particularly by Sambandhar, Appar, Sundarar, and Māṇikkavācagar whose hymns contributed to the formulation of the doctrines and practices of the Śaiva tradition. We are able to have an insight into the lives and teachings of the Nāyaṇmārs from the justly famous *Periya-purāṇam* composed by Sēkkiḷār. The inscriptions relating to the Pallavas and the Pandyas reveal to us that Appar must have lived in the first quarter of the seventh century AD. From the *Periya-purāṇam* we come to know that Appar converted Mahendravarman I to Śaivism. We also know from it that Sambandhar was a contemporary of Tirunāvukkarasar, well-known as Appar. It is also recorded in the *Periya-purāṇam* that Sambandhar converted the Pandya King, Niṉṟa Śīr Neḍumāṟan, to Śaivism. This Pandya King must have lived in the middle of the seventh century AD. As many as ten Nāyaṇmārs, who have been identified in the *Periya-purāṇam*, were contemporaries of Appar and Sambandhar. Scholars are of the view that Sundaramūrti lived towards the close of the eighth century AD; and there were quite a few Nāyaṇmārs as his contemporaries.

Some of the important anecdotes connected with the lives of Sambandhar and Appar give a fairly clear picture of the religious scenario that prevailed during their times. The *Periya-purāṇam* tells us that Sambandhar reconverted Niṉṟa Śīr Neḍumāṟan to Śaivism from Jainism and that after reconversion he was instrumental in the spread of Śaivism in Tamil Nadu. The hymns of Sambandhar also tell us about his encounter with Jainas, the illness of the Pandya King, which the Jainas were unable to cure, and his debate with, and victory over, the Jainas. As a champion of the Vedic tradition, Sambandhar could not but oppose the Jainas who condemned the Vedic rituals and practices. Just as Sambandhar opposed Jainism, even so Appar was totally against Jainism. From the *Periya-purāṇam* we come to know that Appar, after his conversion to Jainism, became well-versed in the Jaina literature and held philosophical debates with the Buddhists and defeated them. His coming back to Śaivism after undergoing several ordeals, which an ordinary human being cannot bear and survive, was a great miracle.

Sambandhar and Appar lived in the first half of the seventh century AD. Though much older than Sambandhar, Appar had the

greatest respect for Sambandhar, and Sambandhar in his turn loved and revered Appar. In fact, the endearing term "Appar" was given to Tirunāvukkarasar by Sambandhar. Both of them together visited many temples; both of them, as valiant votaries of the Vedic and the Āgamic doctrines and practices, defended Śaivism by their crusade against Jainism. Jainism which had the royal patronage was dominant during the sixth century AD. Though in the earlier period there was no religious conflict between Śaivism and Jainism, the sixth century, which witnessed the rise of Jainism, also saw the decline of Hinduism. Noticing that Sanskrit occupied an important place as the language of philosophy and religion in the cultural life of the Hindus, the Jainas translated their scriptures, which were in Prākṛt, into Sanskrit. While this attempt coupled with the royal patronage contributed to the development of Jainism, the increasing number of pseudo-bhaktas, particularly the Kāpālikas and others, brought down Hinduism. Mahendravarman's *Matta-vilāsa-prahasana*, which presents a drunken Kāpālika uttering the names of Śiva, comparing a tavern to a sacrificial place (*yāga-śālā*), and other episodes, gives us an insight into the decline and fall of Śaivism. The four Samayācāryas were responsible for the revival of the glory and greatness of Śaivism. The miracles which they performed made a strong appeal to the people, who attached much importance to the sincerity of devotion and seriousness of religious practices as exemplified in the life history of these exemplars. Cultural historians tell us that the seventh, eighth, and ninth centuries were centuries of devotion in the Tamil country. It is only from the tenth century onwards that the doctrinal side of philosophy along with practices engaged the attention of the preceptors and the people.

Both Sambandhar and Appar popularized the worship of Śiva, which was already prevalent in the south. Both of them, together as well as separately, visited many temples. There are evidences to show that Sambandhar visited as many as two hundred and fifty temples in Tamil Nadu. As part of the Śiva worship in the temples, there was singing of songs accompanied by musical instruments of different kinds, and sometimes even dances. In big temples religious festivals were conducted periodically. Some of the hymns of Sambandhar testify to the fact that there was the chanting of the Vedas in the temple.[33] It appears that, in addition to the *arcakas* who are assigned the duty of conducting *pūjās* to the consecrated

images installed in the temple, the general public also in some places were allowed to do the *pūjā* to these images.

A careful study of the hymns of Sambandhar will reveal to us some of the basic doctrines of Śaivism enshrined in them. Sambandhar speaks of two forms of Śiva, higher and lower, which remind us of the distinction between the two forms of Brahman, higher and lower, also known as Brahman and Īśvara. The higher form of Śiva as conceived by Sambandhar is the primal Being which is the source, support, and end of everything. It means that Śiva is the source not only of the trinity, i.e. Brahmā, Viṣṇu and Rudra, but also of everything else, animate as well as inanimate. The lower form of Śiva is what is frequently referred to as functional Śiva or Rudra who is actively involved in the affairs of the jīva. What is relevant from the philosophical point of view is not the hierarchy among the trinity, but the distinction between the two forms of Śiva. In the language of the Upaniṣads, while the lower form of Śiva is cosmic or *saprapañca*, the higher form of Śiva is acosmic or *niṣprapañca*. Śiva, the primal Reality, becomes the many; though it is immanent in them, it is not exhausted by them. In one of the hymns Sambandhar says:[34]

> Vīḻimiḻalai is the seat of Śiva who is the end and the beginning; who is one, who becomes two, male and female; who becomes the three guṇas, who becomes the four Vedas, the five elements, the six tastes, the seven notes, the eight directions; nevertheless, he is different (though he becomes all these).

Sambandhar is quite familiar with the doctrine of māyā which is as old as the Vedas, However, his interpretation of the doctrine is in conformity with the theistic standpoint as presented in the *Śvetāśvatara Upaniṣad*. Māyā, the Upaniṣad says, is the power or śakti of Īśvara, who is called Māyin.[35]According to Sambandhar, māyā is the supreme śakti of Śiva; it is the other half of Śiva. Also, Sambandhar is familiar with the doctrine of mala which finds an important place in the Śaiva Siddhānta philosophy. One will notice from the study of the hymns of Sambandhar that he was acquainted with the six religio-philosophical systems, particularly the well-known Sāṅkhya-Yoga system. As for the practical discipline for the purpose of attaining mokṣa, Sambandhar laid emphasis on the *Śaiva-mārga* and the *pañcākṣara*.

Familiar as we are with the problem of religious conversion and reconversion, the life history of Tirunāvukkarasar (endearingly

called Appar) is quite fascinating to us. It is the life-story of a renegade who was rescued and rehabilitated in the mansion of Śaivism through the divine grace and the soothing human touch. By birth and training, Appar was a Śaivite. He was converted to Jainism, when he was quite young, then mastered the Jaina scriptural texts and held discussion with the followers of other religions, and subsequently came back to Śaivism through the timely help of his sister. Scholars are of the view that he was born probably in 600 AD. and lived a long life of eighty-one years. He was the senior contemporary of Sambandhar, and also perhaps of Māṇikkavācagar.

The hymns composed by Appar reveal to us that he was acquainted with the Vedic literature and also with the different religio-philosophical systems. Right from the Vedic times, the Sāṅkhya system was quite popular and dominant. At some stage or other, either for comparison or criticism, this system has been referred to by the Vedāntins of different shades including the Śaiva Siddhāntins. Appar, like other Śaivites, is familiar with the Sāṅkhya system, refers to the twenty-five tattvas enumerated in it, and says that Śiva, the primal Reality, is beyond the twenty-five tattvas. Like Sambandhar, he too praises the *Śaiva-mārga* and the *pañcākṣara*. The distinction that Appar makes between the Brāhmaṇas and the Śaivites is interesting in the context of the worship of God. Among the Brāhmaṇas who followed the Vedas, some were worshippers of Viṣṇu, some were worshippers of Śiva, and some others were worshippers of both Śiva and Viṣṇu, perhaps also of other Gods. But the Śaiva, whether he was a Brāhmaṇa or a non-Brāhmaṇa, according to Appar, was a believer in the Veda and also a worshipper of Śiva. This kind of distinction between a Śaiva and others is intended to highlight the importance and significance of the worship of Śiva and the value of the *pañcākṣara*. In one place Appar says, "The Brāhmaṇa's jewel is the Veda; ours is the *pañcākṣara*." He goes on to say: "Though one does not have good birth, that which gives much good according to birth is the *pañcākṣara*."[36] This only means that the great mantra, *pañcākṣara*, is available to everyone interested in spiritual progress.

As in the case of Sambandhar, Appar, who is quite familiar with the trinity and the changes in the hierarchy among the three forms of God, transcends the popular Purāṇic account, and views the primal Being, the supreme Śiva, as beyond all these, as formless and nameless. Nevertheless, for the purpose of the philosophical

explanation of the manifested world, he speaks of the "eight forms" of the supreme Reality, enumerating the five elements, the two shining luminaries, and the sacrificing priest, probably Śiva himself. According to Appar, sacrifice is different from worship. Though he does not explicitly state the reason for the distinction between them, a little reflection will help us to see why he has made such a distinction. Sacrifice or ritual which is performed according to a set of regulations or principles following a certain procedure for attaining a fruit very often becomes a mechanical act manifesting the bodily involvement rather than the mental frame. But the involvement of the mind is much more dominant in the act of worship than in the performance of a ritual. Alluding to Dakṣa's sacrifice which Śiva destroyed, Appar says that Dakṣa who lacked the knowledge of the Tantras or Āgamas did not know worship, but knew only the mantras required for performing sacrifice.[37] This once again highlights the importance of the path of bhakti or devotional worship for attaining the goal of liberation. Though Appar was a committed Śaiva, his spirituality transcended the limitations of religion. The supreme Godhead, according to him, is without name, without form, without birth and death,[38] and so whatever be the form and name of God which one worships amounts to the worship of the Godhead. Though the path he has chosen as a devotee of Śiva assuredly takes him to the goal, he is convinced that all the paths which devotees pursue take to the same Godhead ultimately.

The date of Māṇikkavācagar is controversial. While some scholars are of the view that he lived after Sundarar, there are some others who hold the view that he was a contemporary of Appar and that he survived him for eleven years. On the basis of historical and internal evidences, Narayana Ayyar suggests that Māṇikkavācagar must have lived between AD 660 and 692.[39] A reputed scholar in all the Śaiva Āgamas, Māṇikkavācagar was the trusted prime minister of the Pandya King. Here is a legend which illustrates the glorious devotion of Māṇikkavācagar and the godly intervention which apparently solved the problem and then put the devotee in a predicament. On one occasion the king sent him with much treasure to purchase horses for the kingdom. It so happened that on the way he had the vision of Śiva appearing as a guru to him. Forgetting the royal assignment given to him, Māṇikkavācagar spent the money he had with him in the construction of temples and in feeding Śaiva

devotees. When the king heard the news, he was thoroughly unhappy with Māṇikkavācagar, and the jackals-converted-horses which were shown to him in proof of successful trade deal once again became jackals and fled to the jungles. Annoyed with the trick that was played on him, the king imprisoned Māṇikkavācagar and also tortured him. There are also other legends connected with Māṇikkavācagar. When the king realized the greatness of Māṇikkavācagar, the latter was freed from all the official duties and was allowed to lead a spiritual life as he desired. Māṇikkavācagar then left Madurai and came to Chidambaram. His *Tiruvācagam* and *Tirukkōvaiyār*, which constitute the eighth *Tirumuṟai*, have enriched the doctrinal side of Śaivism. The section called "Śiva-purāṇam" in the *Tiruvācagam*, which is recited by the Śaiva devotees, contains the essentials of Śaiva religion and philosophy, studded with concepts and phrases reminding one of the Upaniṣadic message. The *Tiruccadagam*, which consists of one hundred stanzas, is a record of the spiritual progress made by Māṇikkavācagar from stage to stage. He narrates his spiritual progress from his first vision of God to his final realization of Parāparam. His progress is steady, and his understanding becomes deeper and deeper as he advances in his spiritual journey. Following his first vision of God, he has an insight into the work of creation by God; he understands that God has manifested himself in all the things of the world, animate and inanimate, and also functions as the indweller and inner controller of all, transcending the limitations of gender. Thereafter, he receives instruction from God who helps him to see the truth. He realizes then that God who is immanent is also transcendent. He attains the purification of the mind (*ātma-śuddhi*) which symbolizes the removal of bondage. This is significantly brought out by his exhortation to the mind not to stray outside and get involved in the things of the world. Further, he acknowledges his indebtedness to God for all the help and guidance given to him. Then he attains the realization of God, and is in the state of ecstasy, dancing and praising God. At this stage he realizes that everything other than the supreme Śiva is false. In a passage which is oft-quoted, he declares: "I am false, my mind is false, my love is false, and I can realize God only through true devotion."[40] He calls the primal Being, which transcends everything including bliss, Parāparam. In the other parts of this work, he has given a detailed description of the theory of creation and the life of the jīva.

The life of Sundarar highlights a new dimension of relationship between God and man. Much more than a devotee of God, Sundarar was his friend and comrade. Tradition holds that he lived only for a short period of eighteen years of which only two years were spent as a devotee singing the glory and greatness of God. Since he mentions both Sambandhar and Appar in his *Tiruttoṇḍattogai*, he must have lived only after them. He was a contemporary of Cēramān Perumāḷ, and must have lived during the first half of eighth century AD, most probably between AD 710–735. According to tradition, he was a celestial, but was decreed by God to lead an earthly life with two wives as a consequence of his love for two divine damsels. The legendary Sundarar apart, the historical Sundarar had two wives and was subject to domestic unhappiness. Without any selfish interest and commercial motivation, he demanded from God all sorts of things—pieces of gold and bags of grain, precious stones, musk and fragrance and silk clothes, jewels, one third of the riches of Tiruvarur, horses and palanquins; and God readily provided all these to Sundarar. Getting tired of the worldly existence, he requested God to take him back to Kailāsa. To fulfil the request of his friend, God sent a white elephant for his departure to Kailāsa. It may be noted that with Sundarar the period of devotion vividly exemplified in the lives of the Nāyaṉmārs in general and the four Samayācāryas in particular came to an end. The period of devotion is followed by the era of philosophical analysis of the doctrines and arguments of Śaivism. In the words of Narayana Ayyar:

> After the death of Sundarar, Śaivism went through various vicissitudes. Śaiva philosophy as contrasted with Śiva-bhakti came to assume greater prominence; its opposition to Vaiṣṇavism became more marked; its relation to Advaita and Viśiṣṭādvaita came to be examined in greater detail. Consequently the literature that developed on the subject became voluminous. The attitude adopted towards Śaivism by South Indian monarchs such as Rāja Rāja Cōḷa and others had considerable influence upon the religious history of South India.[41]

10. Śaivism in Sanskrit Texts

It is necessary at this stage to look into some of the Śaiva texts which were composed either as independent expositions of the Śaiva

philosophy contained in the Śaiva Āgamas or as commentaries of the Śaiva Āgamas. Philosophical ideas should have taken a long period of time before they were formulated as a coherent system. This was the case with regard to the well-known six Vedic systems. The same logic holds good with regard to Śaivism as a philosophical system. We have already seen that there was no systematic Śaiva philosophy in the Saṁhitas and the Brāhmaṇas. It is only when we come to the period of the Upaniṣads that we find not-too-clear emerging traces of Śaivism, which have to be put together to form a system. The teachings of the Upaniṣads have been interpreted in different ways to support monism and pluralism, monotheism and polytheism, idealism and realism. The philosophical systems that have been constructed out of the teachings of the Upaniṣads are, indeed, so complex that it is difficult to identify them by any one particular label. For example, Nyāya, which is pluralistic, is also theistic. Śaṅkara's Advaita philosophy provides an important place for God, who is endowed with all the features which are mentioned in theistic systems such as Viśiṣṭādvaita; and so Advaita is not anti-theistic, but trans-theistic. Rāmānuja and his followers claim that their philosophy is "viśiṣṭādvaita" in the sense that the oneness of Brahman is qualified by *cit* and *acit*, i.e. the plurality of animate and inanimate beings. Also, Advaita adopts the distinction of standpoints, the empirical (*vyāvahārika*) and the trans-empirical (*pāramārthika*), to justify pluralism and monism at different levels. It means that the teachings of the Upaniṣads lend themselves to different interpretations. The *Śvetāśvatara Upaniṣad*, which is frequently quoted as the earliest source material for Śaivism, has been interpreted by Śaṅkara to accommodate both theistic and trans-theistic standpoints.

It is only when we come to the Śaiva Āgamas that we could see a fuller development of Śaivism, with more emphasis on rituals and practice. Śaṅkara's commentary on the *Brahma-sūtra* is the earliest extant work which not only elucidates the philosophy of Advaita, but also takes note of other philosophical systems including the Pāśupata for the purpose of refutation.[42] It means that the Pāśupata philosophy, i.e. Śaivism, must have been prevalent during the time of Bādarāyaṇa, the author of the *Brahma-sūtra*, to justify its inclusion along with other systems for the purpose of refutation in the second chapter of this work. According to tradition, Śaṅkara was familiar with the *Sūta-saṁhitā*, which forms part of the *Skanda-purāṇa*. The date

assigned to the *Sūta-saṁhitā* is sixth century AD The *Sūta-saṁhitā* accords an important place to the Āgamas such as the *Kāmika* and others. The *Mahābhārata* and many Purāṇas refer to the Pāśupata school. In the *Vāyavīya-saṁhitā*, which forms the last section of the *Śiva-mahāpurāṇa*, there is an account of the Pāśupata philosophy. The *Pāśupata-sūtra* with the *Pañcārtha-bhāṣya* of Kauṇḍinya serves as the source book for constructing the Pāśupata philosophy.

Scholars are of the view that Kauṇḍinya who wrote the commentary on the *Pāśupata-sūtra* lived between fourth and sixth century AD Nakulīśa, it is said, was the founder of the Pāśupata system. Of the eighteen teachers of the Pāśupata tradition, Nakulīśa was the first. Since Kauṇḍinya does not refer to any Upaniṣad or any other school excepting Sāṅkhya–Yoga, it is not unreasonable to hold that the Pāśupata system must be an ancient one which was prevalent at the time of Bādarāyaṇa. Mādhava, the author of the *Sarva-darśana-saṅgraha*, refers to Nakulīśa-Pāśupata system. It is likely that the Nakulīśa-Pāśupata system is based on the *Pāśupata-sūtra* with Kauṇḍinya's commentary thereon. It is claimed that the Pāśupata philosophy owes its origin to Lord Maheśvara. Tradition holds that Nakulīśa, the first teacher of the Pāśupata philosophy, was an incarnation of Śiva. We can construct only a fragment of the Pāśupata philosophy through the help of Bādarāyaṇa's relevant sūtras and Śaṅkara's commentary thereon.[43] Śaṅkara tells us that, according to the Pāśupatas, God or Parameśvara is only the instrumental cause of the world. Further, the Pāśupata system accepts five categories—cause (*kāraṇa*), effect (*kārya*), communion (*yoga*), rules of conduct (*vidhi*), and the end of sorrow (*duḥkhānta*). Since the Pāśupata philosophy discusses the above mentioned five topics, it is sometimes referred to as the Pañcārtha philosophy. So far as the instrumental causality of God is concerned, the Pāśupatas do not seem to differ from the Nyāya–Vaiśeṣika system. Vācaspati Miśra, the celebrated commentator on Śaṅkara's *Brahma-sūtra-bhāṣya*, speaks of four categories of Māheśvaras, viz. the Śaivas, the Pāśupatas, the Kāruṇika-Siddhāntins, and the Kāpālikas.

A brief explanation of the philosophy of the *Pāśupata-sūtra* with Kauṇḍinya's commentary thereon will help us to appreciate the importance of this work for the philosophy of Śaivism.[44]According to the Pāśupata system, Śiva is Mahākāruṇika, because he alone can liberate the jīva from bondage. Since Śiva's will is all powerful and unlimited, it can operate on the jīvas and the world on its own

without reference to any other factor. It means that God's power can operate on its own in the process of the manifestation of the world, or in liberating the jīvas from bondage without taking into consideration the karmas of the jīvas. The word "paśu" is used in two senses. According to one sense, it means "cause and effect". All jīvas are bound by cause and effect during their empirical existence. It is also used in the sense that the jīvas are capable of perception, though their perception is normally limited to the things of the world without a deeper understanding of their underlying cause. Śiva is Pati, because he protects all the jīvas during their empirical existence, controls them in all their activities, and also liberates them through his grace. The word "yoga" should be understood in the sense of union or contact between the jīva and God. The idea that is sought to be conveyed here is that the objective of the Yoga is to establish the contact between the jīva and God. However, this contact or union with God cannot be attained by mere knowledge. What is absolutely necessary for it is the observance of certain disciplines or practices which are called *vidhi*. The dissolution of sorrow which marks the end of empirical existence takes place through the grace of God for one who follows the *yoga-vidhi*. The Pāśupata system, like other systems, accepts the distinction between pramāṇa and prameya. The five categories (Pañcārtha) mentioned earlier are the prameyas, which are known through three pramāṇas—perception, inference, and Āgamic testimony. It will be of interest to note the special meaning of the word "liṅga" as used in this system. A Pāśupata is expected to smear his body with the ashes. In fact, the ashes are to be used for bathing instead of water for the purpose of purification and also for the purpose of identification as a follower of this tradition. So the ash by which an ascetic smears his body is called *liṅga*. According to this system, liberation which is establishing connection with Śiva is called *sāyujya*. It may be noted that the general philosophical outlook of this school is not monistic in the sense in which Advaita is monistic; on the contrary, it is monotheistic and pluralistic.

Of the four parts of the Śaiva Āgamas, only the Vidyā-pāda or Jñāna-kāṇḍa contains philosophical doctrines of Śaivism; the other parts are mainly concerned with rituals, details of worship, yogic practices, and so on. Some Āgamas like *Mṛgendra* represent the early stage of the systematization of Śaiva philosophy. The *Raurava Āgama* contains the *Śiva-jñāna-bodha* which is an important philosophical

text in the form of sūtras. There are many scholars who hold the view that the Tamil text with the same name composed by Meykaṇḍār is a translation from the Sanskrit Āgamic work, whereas some others maintain that it is an independent text, embodying the teachings of the Āgama. It may be noted that this short, but important, sūtra-work has been interpreted not only from the standpoint of Śaiva Siddhānta, but also from the point of view of Advaita. This text is comprehensive enough to cover the *pramāṇa-prameya-vicāra* like any other philosophical text. It is comparable to other sūtra-works which serve as basic texts of the different systems. The twelve sūtras are divided into two parts, the first part characterized as "general", dealing with epistemology and metaphysics, and the second part called "special", dealing with the nature and means of liberation. A noteworthy characteristic of this work is that each sūtra is not only divided into separate adhikaraṇas, but also contains a kind of a commentary on each adhikaraṇa. Further, both the adhikaraṇa and the commentary are illustrated by analogies (*udāharaṇa*). It has a commentary called *Śiva-jñāna-siddhiyār* by Aruḷnandi Śivācārya, the direct disciple of Meykaṇḍār.

The *Pauṣkara Āgama* marks a further stage of development in the formulation of the philosophy of Śaivism.[45] Though one can trace elements of epistemology covering the sources and validity of knowledge in other Āgamas, it is in the *Pauṣkara Āgama* that a separate chapter is devoted to the discussion of the pramāṇa theory. It looks as if this Āgama represents the final stage in the development of the theory and practice of Śaivism. Though one would expect the inquiry into the pramāṇa theory to precede the inquiry into the prameya theory, the former is discussed at length only towards the end. The metaphysics of Śaivism, according to this Āgama, deals with six categories, namely Pati, kuṇḍalinī, māyā, paśu, pāśa, and the instruments. From this perspective, it may be said that Śaivism deals with *śaṭ-padārtha* and not *tri-padārtha*. There is a commentary on this Āgama written by Umāpati, who is different from his namesake greatly venerated as one of the santāna-kuravars of the Śaiva Siddhānta tradition. All the basic concepts and doctrines of the Śaiva philosophy are to be found in this Āgama. Śiva is described as pure consciousness (*vispaṣta cinmātra*) and infinite (*vyāpaka*) and that he remains immutable even though his energies function manifesting the world. When the energies are active, there is creation, and the experience of the manifested world

by the souls is called the state of enjoyment (*bhoga*). The discussion of the pramāṇa theory in the Pramāṇa-paṭala section of this Āgama is of great value to the student of philosophy in general and of Śaiva philosophy in particular.

This Āgama accepts four pramāṇas, viz. perception, inference, verbal testimony, and postulation. Though ordinarily we say that the cognition of any entity is made possible by a pramāṇa, strictly speaking it is the consciousness-power (*cit-śakti*), the supportive principle of every pramāṇa, that is the revealing power. The definition of pramāṇa formulated in this Āgama deserves careful attention. Usually, a pramāṇa is defined as that which produces pramā, i.e. knowledge. This definition, according to this Āgama, is too wide, because it includes, as part of the definition, sense-organs and other accessories such as the light of a lamp, etc. Drawing a clear distinction between the instrument of knowledge and the object of knowledge, this Āgama holds that an object of knowledge (prameya) cannot itself be an instrument of knowledge (pramāṇa). The sense-organs which are called cognitive instruments are themselves objects of knowledge, i.e. they are prameyas; and if they are prameyas, they cannot also be pramāṇas. With a view to avoid this problem which arises as a result of the dichotomy between pramāṇa and prameya, this Āgama defines pramāṇa as consciousness-energy (*cit-śakti*) which is free from doubt, error, and memory. Further, it is directed outwards, not to the knower itself. Though the expression "*cit-śakti*" usually means knowledge rather than the means of knowledge, it is used in the present context in the double sense of instrument and result. As it is connected with the self, it is the instrument, and since it is turned towards external objects, it is the result. On account of the dual nature it possesses, it is but proper to call it the instrument of knowledge. This *cit-śakti*, functioning through the *buddhi-vṛtti*, attains the status of a pramāṇa. It may be noted that the Śaiva Siddhānta system has been greatly influenced by the pramāṇa theory formulated in this Āgama.

A further development in the formulation of the doctrines and arguments of Śaiva philosophy took place with the composition of a class of books called "Aṣṭa-prakaraṇas" of which the *Tattva-prakāśa* of Bhoja of eleventh century AD is an important one.[46] There are two commentaries on this work, one written by Śrīkumāra and the other one by Aghora Śivācārya. The *Sarva-darśana-saṅgraha* of Mādhava refers to the *Tattva-prakāśa*. Though it is difficult to fix

the date of Śrīkumāra, internal evidences indicate that he was earlier than Aghora Śivācārya. A study of Śrīkumāra's commentary of the *Tattva-prakāśa* reveals to us that he tried to understand the teachings of Bhoja in a monistic way, almost coming closer to Advaita. Aghora Śivācārya wrote a commentary on the *Mṛgendra Āgama* called *Mṛgendra-āgama-vṛtti-dīpikā*. He remarks that some scholars have tried to interpret the *Tattva-prakāśa* in a monistic way and that he was trying to set right this mistake by writing this commentary closely following the Āgama texts. We have already noted that, like the Upaniṣads, the Āgamas too could be interpreted in different ways. It should not, therefore, surprise anyone if Śrīkumāra and Aghora Śivācārya take two different standpoints. It may be noted in this connection that monistic Śaivism was not favourably received from the beginning, even though the pluralistic explanation of the relation between Śiva and his śakti as well as the relation between Śiva and jīva is riddled with difficulties. Commenting on the philosophical scenario of the different kinds of Śaivism, S.S. Suryanarayana Sastri observes:

> . . .monistic Śaivism (*aikyavāda-śaiva*) is given a relatively low place in the estimate of the Siddhāntin, who is a realist. The basic teachings of Śaivism would thus seem to have undergone pretty nearly the same vicissitudes as the Upaniṣads, being interpreted variously according to the metaphysical bent of the followers.[47]

Again, reviewing the shift from one extreme position to another, he says:

> The Śaiva philosophy is, in a sense, typical of the entire range of Hindu thought. While, in all its forms, it subscribes to the belief in three *padārthas* (categories: God, soul, and the bonds) and thirty-six tattvas (principles), in the reality ascribed to the tattvas and in the independence assigned to souls and matter, it varies from idealistic monism at one end of the scale to pluralistic realism at the other end. But all through there will be found the typically Hindu insistence on knowledge as essential to salvation, and as the prime cause thereof, though in some forms of Śaivism, this requisite is diluted with (or they would say, reinforced by) deeds. All such variations may be found in the recognized orthodox forms of Śaivism leaving out of account types like the Pāśupata (which does not recognize that God is the material cause or that he has any regard for the karma of souls in creation), the Mahāvratas, the Kāpālas, etc.. . . These latter are near the gate of truth, but yet outside it; while, even among those that have entered

> that gate, there are numerous gradations. Which is placed higher will depend on the outlook of the system that makes the estimate.[48]

Bhoja's objective in writing his book is to explain the metaphysics, epistemology, and soteriology of Śaivism. Since every object is dependent on Śiva, it is but appropriate to consider Śiva as the central category of the metaphysics of Śaivism. Śiva by his very nature is existence, consciousness, and bliss. Everything, animate as well as inanimate, owes its origin and existence to Śiva. Though he has no organs and body like a jīva, by the energy (śakti) inherent in it, he creates the entire world. He is infinite and eternal, ever-existent and ever-free. Also, he is immutable and pure. The fivefold action he does, namely, creation, sustenance, destruction, obscuration, and liberation, is the manifestation of grace (*anugraha*). The śakti or energy of Śiva is entitatively one, but functionally many. Whether Śiva is only the instrumental cause of the world, or whether he is both the material and the instrumental cause of the world, is the problematic on which the preceptors of Śaiva philosophy are divided. We have already stated how Śaṅkara in his criticism of the Pāśupata philosophy rejects the view that Brahman or Śiva is only the instrumental cause of the world. Śrīkumāra seems to subscribe not only to the ancient Pāśupata view which holds that Śiva is only the instrumental cause of the world, but also the Advaita view according to which Brahman or Śiva is both the material and the instrumental cause of the world. However, Aghora Śivācārya goes back to the ancient Āgamic view and maintains that Śiva is only the instrumental cause of the world. While holding that māyā, which is the energy or power of Śiva, is the material cause of the world, he is not willing to accept that Śiva, who wields this power called māyā, is the material cause. What, then, is the relation between Śiva and māyā? Are they identical or different? If the former, to say that māyā is the material cause of the world amounts to saying that Śiva is the material cause of the world. If the latter, how is it that māyā which is characterized as the śakti or energy of Śiva belongs to him. Though Bhoja is against the material causality of Śiva, he does not help us to resolve the problem of the relation between Śiva and māyā in favour of the instrumental causality which he defends. Nor does Aghora Śivācārya enlighten us in this regard. S. Dasgupta highlights the difficulty which the Śaiva texts face as follows:

> . . .most of the Siddhānta schools of thought are committed to the view that the material cause is different from the instrumental cause. This material cause appears in diverse forms as māyā, prakṛti or the atoms and their products, and the instrumental cause is God, Śiva. But somehow or other most of these schools accept the view that Śiva, consisting of omniscience and omnipotence, is the source of all energy. If that were so, all the energy of the māyā and its products should belong to Śiva, and the acceptance of a material cause different from the instrumental becomes an unnecessary contradiction. Various Siddhānta schools have shifted their ground in various ways, as is evident from our study of the systems, in order to get rid of contradiction, but apparently without success.[49]

Though the Naiyāyika holds the view that Īśvara is only the instrumental cause of the world, he not only consistently adheres to the distinction between the material cause and the instrumental cause, but also does not ascribe to God who is omniscient and omnipotent any aspect or trace of material causality such as energy or māyā.

Just as Rāmānuja has integrated the teachings of the Upaniṣads and those of the Pāñcarātra Āgamas, even so Śrīkaṇṭha has combined the Upaniṣadic teachings with those of the Śaiva Āgamas.[50] There is difficulty in fixing the exact date of Śrīkaṇṭha. Hayavadana Rao thinks that Śrīkaṇṭha lived in AD 1122, whereas other scholars hold the view that he lived about AD 1235. Like Śaṅkara, Rāmānuja, Madhva, and Nimbārka, Śrīkaṇṭha wrote a commentary on the *Brahma-sūtra*, which is both a Vedānta work and a Śaiva philosophical text. It is a Vedānta work, because it expounds the teachings of the Upaniṣads as dealt with in Bādarāyaṇa's *Brahma-sūtra*. Brahman which is the ultimate reality according to the Upaniṣads, Śrīkaṇṭha holds, is identical with Śiva. It appears that Śrīkaṇṭha follows the Śaiva Āgamas as taught by Śveta, who is viewed as an incarnation of Śiva. There is a reference to Śveta in the *Vāyavīya-saṁhitā* of the *Śiva-mahāpurāṇa*. It is also a Śaiva philosophical text as it expounds the philosophy of Śaivism. Like Rāmānuja, Śrīkaṇṭha seems to follow the *Bodhāyana-vṛtti* in his interpretation of his *Brahma-sūtra*. The distinction between Nirguṇa-Brahman and Saguṇa-Brahman, which is the central doctrine in Śaṅkara's Advaita, is not acceptable to Rāmānuja. Śrīkaṇṭha too has rejected this distinction. The highest reality called Brahman or Śiva is of the nature of existence (*sat*), consciousness (*cit*), and bliss (*ānanda*); it has many qualities appropriate to the fivefold function—creation, sustenance, dissolution, concealment, and grace. The philosophy of Śaivism that he presents is different from the one that we are

able to construct from Śaṅkara's commentary on the Pāśupatādhikaraṇa of the *Brahma-sūtra*, 2.2.37-41. The Vedāntic Śaivism which is advocated by Śrīkaṇṭha is called Śivādvaita. Appaya Dīkṣita who wrote a commentary on Śrīkaṇṭha's *Bhāṣya* has shown how the teachings of the Upaniṣads, as interpreted by Śrīkaṇṭha, lend support to Śivādvaita. The basic teachings of Śivādvaita may be summarized in three propositions: (1) Brahman, otherwise called Śiva, is real; (2) the jīvas, who are many, are real; and (3) the world which is the manifestation of the śakti or energy of Śiva is also real.

According to Śrīkaṇṭha, the Pūrva-mīmāṁsā which is concerned with the inquiry into dharma is the indispensable preliminary to the inquiry into Brahman undertaken by the Uttara-mīmāṁsā, and so the two Mīmāṁsās constitute one scriptural authority. It means that, without stopping with the mere study of the Vedas, one should inquire into dharma which is to be followed by inquiry into Brahman. The performance of Vedic duties in a disinterested manner is conducive to the purification of the mind; and a person whose mind is purified is entitled to undertake inquiry into Brahman. It is for this reason that Śrīkaṇṭha holds that the two Mīmāṁsās constitute one scriptural authority (*eka-śāstra*). Though Śrīkaṇṭha's standpoint on this issue radically differs from that of Śaṅkara, Appaya Dīkṣita in his commentary reconciles the two positions. It is not as if there is an inevitable transition from inquiry into dharma to inquiry into Brahman. It must be noted first of all that not all persons who perform the karmas as enjoined in the Vedas are eligible to the study of the Upaniṣads, but only those who, by virtue of the merit acquired through the performance of deeds in the past lives, get the opportunity to further purify their minds by the performance of the Vedic karmas without any desire for the fruits, are eligible for inquiry into Brahman. Appaya Dīkṣita in his commentary accommodates the fourfold eligibility condition as the necessary preliminary to the Vedānta study at this stage in order to reconcile the positions of Śaṅkara and Śrīkaṇṭha. It is not that any person can fulfil the fourfold eligibility condition stipulated by Śaṅkara, but only that person who has already a pure mind will be interested in the study of the Vedānta, and a further chastening of the mind takes place through the discipline of discrimination, dispassion, control of the mind and the senses, and a longing for liberation.

11. Śaiva Siddhānta

A systematic exposition of the philosophy of Śaivism in Tamil took place only from the thirteenth century onwards in the writings of the Santānācāryas—Meykaṇḍār, Aruḷnandi Śivācārya, Manavācagam-kaḍanda Dēvar, Umāpati Śivācārya—who constitute the teacher-disciple tradition. One of the works of Umāpati is supposed to have been written by him in AD 1313. Since Umāpati was the third in the order of the succession of the Santāna-kuravars, the time gap between Umāpati and Meykaṇḍār would not have been more than fifty years. So we can safely say that the thirteenth century and the first half of the fourteenth century was the period when the philosophical texts of Śaivism should have been composed by Meykaṇḍār and his followers. We have stated earlier that Tirumūlar's *Tirumandiram*, which was probably composed in the sixth century AD, served as the bridge between the Vedic and Āgamic scriptural texts on the one hand and the philosophical texts composed by Meykaṇḍār and his disciples on the other. The devotional hymns of the four Samaya-kuravars, closely following the teachings of the *Tirumandiram*, have contributed to the building of the total and unified philosophical structure of both theory and practice of Śaivism by the Santāna-kuravars.

Of the fourteen works which constitute the justly famous *Meykaṇḍa-śāstras*, the first two of them, viz. *Tiruvuṇḍiyār* and *Tirukkaḷiṟṟuppaḍiyār* belong to pre-Meykaṇḍār period. The first of these two works ascribed to Uyyavanda Dēvar is supposed to have been composed about AD 1070. The second work, which is supposed to have been composed about AD 1100, is ascribed to another Uyyavanda Dēvar of Tirukkaḍayūr, who, according to tradition, was a disciple of the former. Some scholars are of the view that these two works were written by one and the same author. The tradition holds that Uyyavanda Dēvar wrote the *Tiruvuṇṭiyār* as a spiritual guide to his disciple. The remaining twelve works of the *Meykaṇḍa-śāstras* were composed by Meykaṇḍār, Aruḷnandi Śivācārya, Manavācagam Kaḍandār, and Umāpati Śivācārya. The basic tenets of a school are formulated in the sūtra-work, which is the foundation for the school. This is true of all the six Vedic systems—Nyāya, Vaiśeṣika, Sāṅkhya, Yoga, Mīmāṁsā, and Vedānta—as well as Śaiva Siddhānta. Like other philosophical systems, Śaiva Siddhānta is a total philosophy consisting of epistemology, metaphysics, axiology, and soteriology.

It is also holistic exemplifying the unity of theory and practice. Usually, epistemological discussion precedes metaphysical discussion. Unless the sūtra-work itself initiates epistemological discussion by stating the views of the school as in the case of the *Nyāya-sūtra*, the author of a commentary on the sūtra-work does not provide a separate section or chapter on epistemology, though he may discuss epistemological issues from the standpoint of the school in several places as the occasion demands. For example, the commentaries which Śaṅkara and Rāmānuja wrote on the *Brahma-sūtra* do not contain a separate chapter on epistemology. The same is the case with Śivajñāna Muṇivar's commentary, *Śivajñāna-pāḍiyam*, on the *Śivajñāna-bodham*. However, Aruḷnandi Śivācārya's *Śivajñāna-siddhiyār* is an exception to these. Considering the importance of the pramāṇa theory which not only makes the metaphysical discussion intelligible, but also justifies it, Aruḷnandi has provided a separate section on epistemology in the *supakkam* portion of his *Śivajñāna-siddhiyār*. It may be mentioned here that fourteen of the 328 verses of the *supakkam* are devoted to epistemology.

The number of pramāṇas accepted by the philosophical systems vary from system to system. Though the Siddhāntin refers to ten pramāṇas, he operates only with three basic pramāṇas, viz. perception, inference, and verbal testimony. He is of the view that the other pramāṇas can be reduced to the first three. Though every pramāṇa is viewed as a source of knowledge (*pramā*), strictly speaking, *cit-śakti* alone, according to the Siddhāntin, is the pramāṇa. The Siddhāntin speaks of two kinds of *cit-śakti*. Of these two, *Śiva-cit-śakti* is the helper and *jīva-cit-śakti* is that which is helped. Since the latter operates only with the help of the former, the Siddhāntin maintains that *Śiva-cit-śakti* alone is the real pramāṇa. The Siddhāntin discusses the theories of truth and error. The theory of truth favoured by the Siddhāntin is like the coherence theory of truth in Western epistemology. It is necessary to point out in this connection that there are two important aspects in the coherence theory. They are harmony and inclusiveness. The Siddhānta theory of error is like the *anyathā-khyāti* of the Nyāya system. It may be noted that the epistemology of the Siddhāntin is realistic.

The metaphysics of Śaiva Siddhānta is pluralistic since it accepts three basic categories which are real. They are Pati (God), paśu (souls), and pāśa (bonds). Though the Siddhāntin relies on the scriptural authority for his belief in the existence of these three

categories, still he formulates arguments to prove their existence. He is convinced that the teaching of the scripture must be made intelligible through reasoning. Hence, he formulates arguments in such a manner as to strengthen the faith of those who believe in these categories on the basis of the scriptural authority. Reason is a supplement to scripture. When there are objections against any philosophical position, it is necessary to meet them and thereby prepare the ground for faith in those who do not initially accept these categories. The point to be noted here is that faith is not generated by reason. Nor is it self-generated. It is the gift of God. The world of everyday experience, the Siddhāntin holds, is real. Like any object in the world, the world as a whole must have been created by an intelligent person, who cannot be anyone else except God. The Siddhāntin speaks of the material, efficient, auxiliary, and final causes. The material cause (*upādāna-kāraṇa*) of the world is māyā. Its efficient cause (*nimitta-kāraṇa*) is Śiva, who is called Pati. The auxiliary cause (*sahakāri-kāraṇa*) is Śiva-śakti. The final cause (*prayojana*) is the purification and perfection of souls. The creation and destruction of the world alternate like day and night. The purpose of dissolution is to give rest to the souls. Dissolution is followed by creation which is an act of the grace of God, because creation has a redemptive purpose. The Siddhāntin maintains that the work of redemption done by God has two features, obscuration (*tirobhāva*) and bestowal of grace (*anugraha*). Creation, maintenance, destruction, obscuration, and bestowal of grace are the five activities of God. Of these, the first three are in respect of the physical universe whereas the last two are intended for the souls.

According to Śaiva Siddhānta, every soul is a complex entity consisting of the body, the motor and cognitive organs, internal organs, and the soul. The soul by its very nature is different from the organs, vital airs, and the body on the one hand, and the creator God, on the other. There is a plurality of souls, and every soul is indestructible. According to the Siddhānta, every soul during its empirical existence is bound by three bonds, viz. āṇava, karma, and māyā, which are collectively called pāśa. It is usual to compare āṇava, māyā, and karma to the husk, bran, and sprout of a grain. Without the outer cover provided by the husk, the grain cannot grow. In the same way, it is not possible for the soul to have experience without the sense of "I" and "mine". While māyā provides the body and organs necessary for experience, there is the fructification of

karma in and through the experience of the soul. Like māyā and karma, āṇava also plays its role in the moral and spiritual evolution of the soul. The Siddhānta maintains that the āṇava-mala functions as actuated by the concealing power (*tirodhāna-śakti*) of God. When the soul is ripe, it is lifted up by the power of grace (*anugraha-śakti*) of the Lord. Consequently, the soul no more functions with the sense of "I" and "mine". Its life at this stage is one of sacrificial love.

The philosophy of Śaiva Siddhānta works out a scheme of moral and spiritual discipline which enables the soul to attain the goal of liberation. The discipline is such that it takes care of the personal, social, and spiritual aspects of the soul. The fourfold discipline of caryā, kriyā, yoga and jñāna help the soul to progress step by step towards God-realization. Caryā is mainly concerned with various kinds of external acts such as sweeping the temple premises, gathering flowers, serving the devotees of God and so on. The focus of kriyā is on physical and mental acts which help the soul to chasten its mind and develop the spirit of detachment. The yoga discipline aims at the development of concentration which is absolutely necessary for meditation. A person who goes through the stages of caryā, kriyā, and yoga is fit enough for the next stage of jñāna. It is necessary to point out that jñāna is not just intellectual exercise or cognitive awareness involving the triple factors of the knower, known, and knowledge. While ordinary knowledge functions at the level of distinctions, the jñāna that dawns on a ripened soul which has successfully gone through the first three stages of discipline is a total, impartite awareness, which may be characterized as God-realization. Every act that we do is not only self-regarding, but also other-regarding. According to Śaiva Siddhānta, the karma that we do should be such that it has to alleviate the suffering of others. Whatever we do has its impact on others in addition to disciplining our life. Not only those who are in bondage, but also those who have attained enlightenment have a social obligation. It is wrong to think that the contemplatives and the mystics do not have social concern. The Siddhānta tradition holds that even the mystics do social service not only through their prayers for the welfare of others, but also by their mere presence in society, serving as a model of virtues. A passage from the *Śivajñāna-siddhiyār* highlights the social dimension of life of everyone, irrespective of the state of life or the stage of development

that one has attained. It says:

> Those who have no love for the Lord have no love for his devotees. Those who have no love for the devotees have no love for themselves. Those who have no love for themselves have no love for any living thing at all. Why talk about them? Though they move about, being devoid of sense, they are verily corpses.[51]

The Śaiva tradition holds that the blue-throated Śiva is a magnificent model for self-sacrifice. To be a devotee of Śiva requires a life which pulsates with sacrificial love.

Notes

* I am greatly indebated to C.V. Narayana Ayyar's *Origin and Early History of Śaivism in South India* (hereafter *SSI*), University of Madras, reprint 1974, Madras, and the numerous writings of V.A. Devasenapathy on Śaiva Siddhānta in the preparation of this paper.

1. *Rg-veda*, 1.114.8.
2. *Ibid.*, 2.33.1.
3. *Ibid.*, 2.33.14.
4. vv. 17–26.
5. *Atharva-veda*, 11.2.18.
6. *Ibid.*, 15.5.1.
7. *SSI*, p. 29.
8. *Taittirīya Upaniṣad*, 2.8.
9. *Muṇḍaka Upaniṣad*, 3.2.3.
10. *Śvetāśvatara Upaniṣad* (hereafter *SU*), 1.8.
11. *Ibid.*, 3.3–4.
12. *SSI*, pp. 39–40.
13. *ŚU*, 2.20.
14. *Kaṭha Upaniṣad*, 6.8.
15. *ŚU*, 3.9.
16. *ŚU*, 3.11, 14–16.
17. *SSI*, p. 52.
18. *Liṅga-purāṇa*, 3.1.
19. V.A. Devasenapathy, *Of Human Bondage and Divine Grace*, Annamalai University, 1963, p. 12.
20. *Ibid.*, p. 13.
21. *Mahābhārata*, vana-parva, Chaps. 85–88.
22. *Tolkāppiyam*, Poruḷ 5.
23. See *Taittirīya Āraṇyaka*, Praśna 1, Anuvāka 12, v.58.
24. *Tolkāppiyam*, Poruḷ 41.

25. *Puṟam* 56.
26. *Ibid.*, with Naccinārkiniyar's commentary thereon.
27. *Śilappadikāram*, canto 26, ll. 54–67.
28. S.K. Aiyangar, *Maṇimekalai*, p. 192.
29. See *SSI* for details in this regard, pp. 206–208.
30. See *Tirumandiram*, Tantra 6, v. 1646.
31. *SSI*, p. 218.
32. *Tirumandiram*, Tantra 8, section 27.
33. Sambandhar, Padigam 2, v.1.
34. *Tiruviḷimiḷalai Padigam*, 11.
35. *ŚU*, 4. 10.
36. Appar, 71.6.
37. *Ibid.*, 65.5.
38. *Ibid.*, 224.8.
39. *SSI*, p. 423.
40. *Tiruccadagam*, 97.
41. *SSI*, pp. 470–71.
42. *Brahma-sūtra*, 2.2.37–40.
43. *Ibid.*; Śaṅkara's commentary thereon.
44. S. Dasgupta, *A History of Indian Philosophy*, Vol. V, Motilal Banarsidass, Delhi, reprinted, Delhi 1991, pp. 130–49.
45. *Ibid.*, pp. 29–37.
46. *Ibid.*, pp. 159–72.
47. S.S. Suryanarayana Sastri, "The Philosophy of Śaivism," in *Indian Philosophical Annual*, Vol. 14, University of Madras, Madras, 1982, p. 142.
48. *Ibid.*
49. S. Dasgupta, *op.cit.*, p. 168.
50. *Ibid.*, pp.65–77.
51. *Śivajñāna-siddhiyar*, Supakkam, Sūtra 12, v. 2.
52. See J.C. Chatterji, *Kashmir Shaivism*, Indological Book Corporation, Patna, 1978, pp. 5–7.
53. See Jaideva Singh, *Śiva Sūtras*, Motilal Banarsidass, Delhi, reprint 1995, p. xvi.
54. *Ibid.*, p. 15.
55. *Ibid.*, p. 29.
56. *Ibid.*, p.xlix.
57. See Jaideva Singh, *Spanda-kārikās*, Motilal Banarsidass, Delhi, reprint 1994, Section 2, v.5, p. 119.
58. *Ibid.*, p. 171.
59. J.C. Chatterji, *op. cit.*, pp. 19–20.
60. See Jaideva Singh, *Pratyabhijñā-hṛdayam*, Motilal Banarsidass, Delhi, reprinted 1987, pp. 8–13.

Sundar Sarukkai

Interpreting Scientific Terms Across Traditions

The use of scientific and mathematical terms in ordinary talk or as part of disciplines other than the 'hard' sciences has been viewed with suspicion and disdain by scientists. In large part, the use of scientific terms across disciplines and traditions is seen to be a form of appropriation that is, in the final analysis, not faithful to the original scientific terms. For example, it is commonly heard that the use of 'uncertainty principle' in contexts other than that of quantum physics is a gross misuse of this term. In today's world, scientific and technological concepts have entered common discourse and have developed a narrative structure of their own. Terms like mass, momentum, energy vacuum, Big Bang theory, singularities, topology, complexity, non-linearity, to list just a sample few, also routinely occur in disciplines other than science.

Paradoxically, the appropriation of scientific and mathematical terms by two different disciplines which are not exactly sympathetic to each other—ancient Indian thought and postmodernism—is seen to constitute an important problem for these disciplines. In the case of the former, it is often felt that attempts to claim a prior knowledge of quantum mechanics as in the oft-quoted statement 'quantum mechanics is in the Vedas' or that 'cloning was known to ancient Indians' are totally false. There have also been questions as to the validity of using concepts like energy, matter and vacuum out of context to correlate them with ideas in ancient India philosophies. For example, when we say that *rajas* is equated to energy and *tamas* to mass or inertia,[1] what is the semantic domain of energy and inertia? At the other extreme, postmodernism has recently come under attack by scientists and fellow-sympathizers for a very similar reason that it appropriates scientific and mathematical terms without being faithful in any sense to the original terms.

Further, there is the charge that there is wilful misrepresentation, blissful ignorance of the meaning of these terms and a callous attitude towards a free interpretation of these terms to suit their discursive ends. This attack is at the core of the book *Fashionable Nonsense* by Alan Sokal and Jean Bricmont.

This issue of appropriation of terms across disciplines and traditions is important for many reasons. I will argue in this paper that the charge of appropriation, misuse and abuse of scientific terms by 'non-scientific' disciplines is largely a matter of intellectual prejudice and staking of territorial claims. The best proof for this claim actually comes from looking at how scientific discourse is itself formed. In particular, we note science's appropriation of terms from common talk, philosophy, literature as well as mathematics. Underlying the arguments against the use of scientific terms by non-scientists, we can see the sociological problem of authority—namely, who has the right to speak about these terms—and also the belief that terms in science are extremely specific and are not open to interpretation.

My arguments can be summarised as follows.

1. Science appropriates terms from other non-scientific traditions and uses them in ways it sees best.
2. Mathematics is appropriated by physics (and the other fields in natural, life and social sciences) for its own ends.
3. The attack on postmodernism for using scientific and mathematical terms is not justified since science appropriates mathematics in a similar manner.
4. Science is itself inherently interpretative and thus it cannot deny other disciplines the method of interpretation which it itself so favours.
5. Finally, the central issue is how to judge the validity of terms in discourses which differ radically from one another without imposing the hegemony of the norms of one particular discipline.

1. Terms from Common Language or Other non-Science Disciplines that are Used by Science

Many basic terms in modern science can be traced back to terms which have been taken from common language, literature or

philosophy. Science did not invent the terms mass, energy, vacuum, waves, particles, gravity, friction and so on. They were taken up into the developing field of physics from the terms that were already in use. Newton did not invent the terms mass, force or acceleration. What he did was to interpret them creatively for his ends so that they made sense within his methodology. Also we have to note that even the terms initially used in science have undergone drastic changes in meaning. Mass is a good example. The ideas associated with mass have ranged from matter, substance, inertia, gravitational mass, equivalence with energy, electromagnetic mass and so on.[2]

Even terms like uncertainty are common language terms. Mathematics too makes use of such common vocabulary like continuity, real, imaginary, complex, functions and so on. While new terms are created in the growth of these disciplines, words used by creative writers have also been taken into science and mathematics.[3] While taking these into their fold, scientists were and are not beholden to any notion of faithfulness. What they wanted to do was to appropriate a word or concept and then do what they wanted with it.

Should the natural sciences and mathematics be criticized for taking over terms from natural language, which have their own domain of meaning, and then re-interpret them for their purposes? I do not think so, for the simple reason that once these terms are taken into the scientific discourse they are then open to the interpretative needs of that discourse. The validity of these interpretations is then defined by the norms of the discourse to which they belong. Moreover, it is almost impossible to do science and develop it without taking recourse to appropriation of ideas and terms from other disciplines. Chaos is an example of a discipline within physics which has taken a common language term and then defined it in ways specific to physics. Should we complain that science has appropriated a word that belonged to non-science in the first place? Or do we merely accept that this is a necessary way in which science develops new ideas? What is important is not only the realisation that sciences can appropriate terms which did not belong to science initially but also to look at what it does with these terms.

A commonly held view is that science uses and defines its terms unambiguously. This is normally in contrast to the ambiguity present in natural language terms. But this alone cannot be a reason

to restrict the use of scientific terms in other disciplines because once these terms are taken into these non-science disciplines they too are put under the discursive rules of that discipline. Also, we cannot state that scientific terms are unambiguous or that they are not open to interpretation like terms in other disciplines. I shall illustrate this in the way physics uses mathematics and also how science is itself inherently interpretative.

2. The Use of Mathematics in the Natural Sciences

A good example of the criticism of appropriation of scientific terms is found in the book *Fashionable Nonsense* by Sokal and Bricmont (1998). In this book, the authors attempt a sustained attack on the appropriation of scientific and mathematical terms. Their target is postmodernism. In particular, they are concerned with the "abuse of concepts and terminology coming from mathematics and physics" which postmodernists apparently indulge in. They define four characteristics of 'abuse' (*ibid.*, 4–5).

1. Using scientific "terminology without bothering much about what the words actually *mean*."
2. "Importing concepts from the natural sciences into humanities or social sciences without giving the slightest conceptual or empirical justification."
3. "Displaying a superficial erudition by shamelessly throwing around technical terms in a context where they are completely irrelevant."
4. "Manipulating phrases and sentences that are, in fact, meaningless."

When we consider the issue of understanding scientific terms across traditions, similar ideas about abuse arise.

I mentioned earlier that science uses terms that were and are 'originally' from other discourses. The question then is, does science also abuse these terms when it takes them into scientific discourse in ways similar to the ideas of abuse pointed above? There are two different domains from which science takes its terms. One is the world of natural language, which includes terms from common language, literature, arts and philosophy. The other is the use of mathematical concepts in disciplines such as physics. In both these

cases, we can argue that science 'abuses' concepts and terminology, if by abuse we mean the above four characteristics.

First, in the case of using terms, for example, from philosophy, science uses them "without bothering much about what the words actually mean". In fact, if it did so, then it would not be possible to create a discipline called science! All the examples cited in the earlier section are used in physics without bothering to stick to the original meaning of these terms. Also, these ideas are 'imported' many times into sciences without the "slightest conceptual or empirical justification"—this is a broad claim and should be taken in its generality. For example, the conceptual idea of wave-particle duality does not have empirical or conceptual justification in respect of the common understanding of waves and particles. Once again science cannot be limited to the use of these terms as they are used in other disciplines. Points 3 and 4 given above are also relevant to the charge of abuse in the creation of scientific discourse. It is particularly well manifested in the use of mathematics in physics and other sciences.

The use of mathematics in physics is somewhat of a mystery. The mystery lies in our inability to understand why mathematics seems to work so well in describing and explaining the physical world. This mystery has now been well enshrined in the oft-quoted statement by Wigner about the "unreasonable effectiveness of mathematics". Einstein asks: "How is it possible that mathematics, a product of human thought that is independent of experience, fits so excellently the objects of physical reality?" (Kline 1986, 216). One may claim that nature is inherently mathematical and it is natural, therefore, to suppose that mathematics will be necessary to develop physics. But this view is problematical for many reasons. One important reason is that mathematics is constructed by humans and many times it functions on the order of language. Also, the world of mathematics is *much larger* than what is needed in physics. This also implies that we can have consistent mathematics which does not and cannot describe our world. There are many important philosophical issues in answering this link between mathematics and the world but what I will do here is to consider the *use* of mathematics by the sciences.

The way in which physicists, for example, use mathematics is similar to what Sokal and Bricmont call abuse. If we look at how theories are developed in physics, most often we find that

mathematical terms and concepts are used in a cavalier fashion. It is well known that 'pure' mathematicians find the ways in which physicists use mathematics quite against the spirit of their discipline. The physicists are interested in mathematics not in the same manner as the mathematicians. To the physicists, mathematical results, in general, are what are usable. Important elements of mathematical proof, existence conditions etc. are not relevant to the physicists' appropriation of the mathematical results. It is also often the case that physicists use mathematical terms without a clear understanding of what the terms *mean*.

The idea of number is a simple example. Although it is the same entity—number—the ways in which mathematicians, physicists and philosophers understand it are significantly different. While there may be a few ideas about numbers that are common to them, it is important to note the larger discursive space of numbers which is unique to each discipline. A number theorist deals with numbers and 'understands' them as part of a complex discourse of number theory. An experimentalist, for example, will look at numbers within the context of measurement, approximation, accuracy and error. A philosopher may look at it in terms of set theory and underlying logical structure or in terms of a sociological basis. When a physicist uses a result from number theory as part of a larger scientific theory it is mostly a matter of appropriation of terms from another discipline. Validation for this appropriation will arise not from the discourse of mathematics (say, number theory) but from the discourse into which the term is appropriated into—physics.

The very notion of 'applied' in the use of the term 'applied mathematics' is a pointer to the complexity inherent in the use and abuse of mathematical terms even in disciplines such as physics. Steiner (1998) points to the example of the use of the language of fibre bundles (from mathematics) in describing gauge theory (in physics). The use of this mathematics was an identification made at a later stage after gauge theory had been described. The principal author of the gauge theory, Yang, many years after his seminal paper, still could not understand the identification of gauge theory and fibre bundles. Yang writes, "The language of modern mathematics is too cold and abstract for a physicist" (*ibid.*, 34).

Steiner further describes some mathematical concepts "whose descriptive applicability *now* seems mysterious" (*ibid.*, 36). These include the use of complex analysis and analytic function. The

notion of analyticity is applicable across a wide range of theories in physics including fluid dynamics, thermodynamics and relativistic field theory (*ibid.*, 37). For example, the use of analyticity in assuming that the "critical temperature of a magnet is an analytic function of its dimension" is "physically meaningless" (*ibid.*, 38). Steiner also notes that the fundamental concept of Hilbert space, so basic to quantum mechanics, is itself seen to be a 'miracle' by Kac and Ulam. The maximality principle that is at the heart of Hilbert space in quantum mechanics has not only no correlate in classical mechanics but is also 'physically unintelligible'. Among other things, it is also quite different from the 'pure' mathematical formulation of this space. Steiner concludes that the "descriptive applicability of the Hilbert space formalism, which follows from the maximality principle, remains a mystery" (*ibid.*, 44)—further echoing Feynman who finds it amazing that we can predict using mathematics, "which is simply following rules which really have nothing to do with the original thing" (*ibid.*, 44). Once again we are pointed to the inhering presence of appropriation and the development of the appropriated terms within the dynamics of the new discourse.

The mystery of mathematics lies in its applicability in describing the natural world. How is it that physicists are able to use mathematics without ever bothering about this question? The answer, for Steiner, lies in the use of mathematics as analogies. He distinguishes two kinds of analogies: formal and Pythagorean. By formal analogy he means one that is "based on the syntax or even orthography of the *language* or *notation* of physical theories, rather than what (if anything) it expresses" (*ibid.*, 54). By Pythagorean analogy he means a "mathematical analogy between physical laws (or other descriptions) not paraphrasable. . . into non-mathematical language" (*ibid.*, 54). Both these analogies are relevant to our understanding of the appropriation of mathematical terms in physics. This appropriation typically works in this way: first a mathematical term or structure is taken to model and describe a physical system. Once it has been taken into that particular 'physics' the mathematical term is open to interpretations and manipulations consistent with the demands of that system. It is not possible to be 'faithful' to the claims of the original term. One can use a significant amount of differential equations in physics without knowing a minuscule of the mathematical literature on differential

equations. One of the fertile ways of doing physics is to keep appropriating mathematical results and terms without bothering much about their 'exact' meaning. The two kinds of analogies described by Steiner belong to this practice.

There are many examples where the form of the equation suggests new physics. That is, the notation of certain equations open themselves out to various kinds of manipulations which are, in a strict sense, not 'faithful' to the original interpretation, not exactly meaningful in comparison to the original one and so on. The use of forms, as in the reduced mass and Schrodinger's equation, show that the progress in physics is very much indebted to such free appropriations—or rather, free translations.[4] Heisenberg's formulation of isospin is well known. Here there are potentially two 'abuses' in action. One is the use of the common term 'spin' to denote something totally different from the 'prior' connotations of this word. When an electron, for example, is said to have a spin it is not meant in a 'literal' (prior, original) sense. The electron spin manifests some fundamentally different properties than spin as understood commonly. The other abuse is to extend this concept of spin to the concept of isospin with very little conceptual or empirical justification. Heisenberg uses this analogy to postulate that the neutron and the proton are two states of the same particle with the implication that the neutron and proton can be got from each other through an abstract rotation of 180 degrees in a fictitious isospin space (Steiner 1998, 87). This picture, which inaugurated a new growth in particle physics that later generated the model that predicted quarks, is based on a creative 'abuse' of prior notions drawn from common language, physics and mathematics.

When we consider the use of mathematics in disciplines such as physics, we see the weakness of the attack against using scientific and mathematical terms in other disciplines or traditions. All the four characteristics of abuse set out by Sokal and Bricmont are manifested in 'applied' mathematics. Point one about using terminologies "without bothering much about what the words actually *mean*" is in fact a *favoured strategy* in physics. One does not get restricted by prior meanings and usages. The creativity in using mathematics in physics is dependent upon new inter-pretations without any insistent and necessary connection to prior, original meanings. Point two about importing concepts "without giving the slightest conceptual or empirical justification" is actually a statement

that describes physics best! The use of formal and Pythagorean analogies and the few examples discussed above make it obvious that new theories and ideas were first catalysed without any possible hope that they would be empirically testable. Even the conceptual appropriation is most times changed drastically to suit physics. In the formation of the discourse, new theories are constructed without there being any empirical test for them. In the present day, supersymmetry, superstring and supergravity theories are all candidates that have imported ideas from a wide range of disciplines without giving any reasonable empirical justification.[5] Point three is problematical for many reasons, most of which have to do with subjective judgement. The use of the phrases 'superficial erudition', 'shamelessly throwing around' and 'completely irrelevant' displays a prejudicial intent in authors. The attack on superficial erudition is perhaps easily taken care of—not through any argument but by pointing out that mathematicians commonly think that physicists display superficial understanding of their subject! As far as irrelevance goes, it is quite clear that what is relevant is dependent on who is doing the judging. The final characteristic is that of manipulating language in such a way that they are actually 'meaningless'. While a response to this would have to deal with much larger issues of language and the relationship of epistemology with natural and technical languages, it is a statement that applies equally well to the use of mathematical equations, structures and entities by physicists.

To these arguments the authors might want to respond by saying that while applied mathematics may show these characteristics it is also the case that physics uses mathematics essentially, in contrast to postmodernism. This is a point which needs more discussion and in the last section I will deal with it very briefly. The basic point remains that new ideas build upon old ones, upon ones drawn from entirely different disciplines only by some kind of appropriation of scientific terms. So both in the case of traditional disciplines or postmodernism the appropriation of scientific terms should be seen as a natural progression of these disciplines. And learning a lesson from science, these disciplines, when charged with abuse, should continue to ignore the charge and merrily continue what they are doing!

3. Science is Inherently Interpretative

Underlying the above arguments is a consistent suspicion towards the idea of interpretation in science. The strong reaction against the use of scientific and mathematical terms in disciplines other than science and mathematics is largely based on the belief that scientific terms are bound by very specific meanings. For example the use of the word energy is seemingly very specific in science and the use of this term in philosophy or Indian cosmogony for example, is an 'abuse' as defined above. While there is some merit in this complaint especially when we consider the use of these terms in order to make claims of priority (like 'quantum mechanical ideas were in the Vedas'), philosophically it is a genuine problem which has to do with the nature of interpretation. If we set aside the problematical claims based on interpretation of scientific terms for ideological reasons, we will be able to see that the use of scientific terms in non-science discourses is a legitimate discursive activity. We have to remember that science itself—both 'pure' and 'applied' science—is possible only because it is fundamentally an interpretative activity. What can be an issue is how interpretation in science differs from that in other disciplines.

There has been much work on the hermeneutics of science. It is clear that every scientific act is interpretative. I have argued elsewhere (Sarukkai 2002) that the ways in which science constructs its discourse actually privilege interpretation. The use of multisemiotic systems in scientific texts should be understood as a strategy that essentially allows rich interpretations to occur. I will indicate very briefly the mechanism of this.[6] A scientific text typically uses natural language, tables, charts, graphs, mathematical entities and equations and so on. These different semiotic systems function together as a coherent whole. I believe that scientific texts should *necessarily* be multisemiotic because it is in these texts that parallel semantic domains can be created. When physics starts with a simple problem, say the oscillation of a pendulum, it uses many different textual strategies. Initially we draw a figure of a pendulum; this then enables us to make various identifications like tension on the string, gravitational force acting on the mass, the angle of displacement and so on. The figure of the pendulum actually serves to open up the interpretations that allow geometry and algebra into the picture. The figural narrative of the pendulum thus leads to the geometrical and algebraical narratives of the same event of the pendulum's oscillation.

In these acts, there is really very little value given to faithfulness of terms that are used. In fact, the very use of the figural diagram is a pictorial representation of a physical event. The reduction of the extended object to point representation is another creative 'rewriting' that has no sympathy with the reality of the original event. Once the event is represented and symbolized in this manner, they are open to the dictates of the discourse into which they are taken—say geometry, algebra and differential equations. The interpretative space is unique to each of these sub-disciplines. Thus, the use of multisemiotic systems in a scientific text functions as a mechanism that should be seen as a *discursive strategy* to multiply the space of possible interpretations.

Interpretations are an integral part of experiments also. Heelan (1983) notes that observation in an experiment is similar to reading a text. New experimental insights are many times catalysed through creative interpretations. Even in mathematics, we see that new ideas often arise by an act of interpretation and appropriation of terms across its sub-disciplines. When some claim that interpretation is not central to science, they are probably responding to certain views that have privileged hermeneutics which suggest that interpretation implies that anything goes.[7] There is also a recurring belief that science uses mathematics because mathematical terms are not ambiguous like natural language terms. But as a careful study of mathematics will show, this belief too is not sustainable. Mathematics has special writing and discursive strategies including using rhetoric, metaphors and a unique style of alphabetization.[8]

Metaphorical use is one of the possible ways in which terms from one discourse function in another discourse. We can argue that when we talk about using a scientific term in philosophy it is possible that we are actually opening up the metaphorical space of philosophy. Thus we use scientific or mathematical terms in philosophy without expecting or wanting them to be restricted to a specific meaning they may have had in the original discourse. As argued earlier, the idea of unambiguous meaning of scientific terms is itself quite unclear since these terms take on various interpretations in different models and theories across different sub-disciplines of science. But even if there is a restricted set of meaning, once we take these terms into philosophy we are essentially using them to articulate an image and then build further on this image. There is no pretence to using the

'literal' meaning of scientific terms in non-scientific disciplines and therefore, this use should not be criticized as not living up to the literal meaning. It is clear that when some writers in philosophy use the word 'topology' they are surely not doing mathematics. And what is fundamentally important to note is that science too uses metaphorical images consistently in its discourse.

Both science and mathematics draw upon metaphors in an essential way. Arbib and Hesse (1986) argue that "all language is metaphorical"; Bono (1990) sees metaphors as a 'medium of exchange' and Bohm and Peat (1987) argue that metaphors play an important role in scientific research. In using metaphors, what science does is basically search for a larger space for meanings with the help of some concepts that can be used metaphorically. These could be concepts that are taken over from common language, philosophy or even mathematics. For example, when groups are used to put some elementary particles into a 'family' it is obviously a particular interpretation of group structure (as well as interpretation of 'family'!). This particular metaphorical image has become indispensable in the development of modern physics. If mathematics had insisted on a 'literal' and 'authorial' understanding of groups, then it is conceivable that particle physics as we know it now would not have happened. It should also be remembered that mathematics too uses metaphors in an essential manner. Numerous examples can be found in its many disciplines.[9]

Not only is science inherently interpretative, it is also the case that the richness of its narratives cannot arise without being necessarily dependent on interpretation, use of metaphors, rhetoric and so on. One of the ways in which interpretation is made possible is by using terms across disciplines with some sense of freedom to develop them in ways that science sees fit. Holding on to strict, prior meanings of the terms is not only not possible but also not desirable. Thus, science itself grants legitimacy to the other disciplines such as philosophy to appropriate its terms and do what they want with it! Individuals or communities may not like it but as far as the discursive dynamics go, it is part of the growth of every discourse.

4. The Validity of the Use of Scientific Terms across Traditions

One basic issue remains in this discussion. How valid are the use of terms across disciplines? How do we determine their validity? And

is there some essential difference between the use of mathematical terms in physics and their use in postmodernism, for example? The last question is easier to answer. Physics, while appropriating mathematical terms and concepts, also continues to do mathematics—if not 'exactly' as mathematicians do, at least with some degree of commonality. Thus it is possible that even when physicists do 'imperfect' mathematics or interpret mathematical terms creatively they do something with that interpretation and this can, as it sometimes does, contribute to mathematics itself. It is clear that in this mode of practice, the use of mathematical terms in philosophy is quite different from their use in physics because philosophy (in general) does not further the interpretative use of these terms in the development of mathematics. So it may seem that one notion of validity (i.e. use instead of abuse) can be understood in this fashion.

Further, it is often thought that the validity of using mathematics in physics is based on experimental justification. It is a mistake to look upon all theoretical developments in physics as regulated by experimental results since theory develops on its own as described above. It is usually the case that after a theory has been developed that one validates it by looking for experimental correlation. But the process of developing a theory is not validated by experimental results in entirety. (It will in general be built upon prior theories and concepts which may have some empirical justification.)

But note that the above arguments do not hold for science's use of terms taken from philosophy and common language in the sense that science does not continue to do philosophy or participate in the common language discourse in the same way it does with mathematics. Even if we claim that science does not 'abuse' mathematical terms, we will have to say that it abuses terms taken from other disciplines.

Regarding experimental validation there are two points that are important. First is the relative independence of the activities of theorising and experimenting in the sense that creative ideas and theoretical formation are possible largely by manipulating mathematical symbols, constructing models and so on. Experiments, as is usually claimed, are the final judge of these theories but this should not make us think that theoretical formation is regulated at *every step* by experimental proof. Also, there is a large surplus of

theories in physics which have no possibility of experimental verification at the present time. Thus in the development of theories in physics and other scientific disciplines the regulative presence of experimental results is often ignored by the practitioners.

Second, there is a larger question involved here. How do we validate different types of discourses? Should philosophy or literature be asked to validate themselves through some kind of empirical and experimental method? Is it possible to find common norms that can help us say that one kind of theorising abuses concepts and another doesn't? If science has particular criteria for evaluating whether an imported concept is useful, should the same criteria apply to other disciplines which are not modelled on the scientific one?

These are broader issues that arise even when we consider the validity of the social sciences. For example, if scientific discourse is largely quantitative, how do we judge the validity of qualitative methods in research? It has been argued that qualitative research is also scientifically valid because both qualitative and quantitative methodologies have a common logic of inference.[10] Discourses that do not use mathematics (or in general multiple semiotic systems) have a different kind of validity. There is also a notion of empirical relation in these discourses. Using mathematical or scientific terms in these qualitative disciplines has in fact generated rich models and theories. This has been done not with following the faithful original meaning but with a more interpretative approach towards these terms. Ultimately, the question of validity, including the 'valid' use of appropriated concepts, lies within the norms of validity prescribed by the discourse which appropriates these concepts and terms.

When we explicitly consider philosophy, there are many other points which need to be considered. When philosophy deals with the foundational issues of other disciplines like science, it will indeed take scientific terms like mass, energy, causality, etc., and place them within its own tradition of analysis and argumentation. To expect philosophy to be faithful to these concepts in the way science deals with them is to negate the possibility of a philosophical study of science. And in spite of nasty pronunciations on the relevance of philosophy of science by scientists like Weinberg and Hawking, it is clear that philosophy does a job that science does not. For example, we can be very good physicists without knowing

anything about the nature of causality although this concept is central to science. When postmodernism or Indian philosophical systems consider these concepts they are not doing science; they are only engaging in philosophical issues.

It is true that science has progressively expanded its domain by taking up questions that were traditionally under the purview of philosophy such as consciousness and 'life'. But in doing so, they do not address the philosophical concerns which are an integral part of these concepts. To randomly claim that scientists have no right to appropriate these concepts and debate on them, using scientific terms and principles, is to engage in juvenile staking of territorial claims. This also leads us to consider a contentious claim: there is really no possibility of claiming abuse of scientific terms when used and invoked in a different context, in different traditions. This statement is about discursive methodology and not about individual ideologies or examples that reflect 'bad' academic practices.

Notes

1. "Self, Society and Science: Theoretical and Historical Perspectives": lead paper of the seminar of the same title. Centre for Studies in Civilizations, 2002.
2. See Max Jammer (1961) for a history of the concepts of mass.
3. Quark is one example where Gell-Mann took the word from a novel by James Joyce to name a new particle. For more on the use of literary strategies in the writing of science, see Locke (1992).
4. See Sarukkai (2002) for a more detailed analysis of the link between science and translation.
5. Of course, it is claimed that if experiments improve drastically we may be able to test these theories. The basic point to note is that fertile theoretical activity is possible and continues to proliferate without any prior experimental justifications.
6. For more details, see Part Two of Sarukkai (2002).
7. For more on hermeneutics of natural science, see Crease (1997).
8. See Sarukkai (2002) for a discussion on the writing strategies and hermeneutics of mathematics.
9. Some examples of metaphors in mathematics can be found in Sarukkai (2002. pp. 77–88).
10. See King, Keohane and Verba (1994).

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Reappraisal of the Civilizational Question: Why the Scientific Revolution did not take place in China or India

Introduction

History of science inextricably involves explanation. What is it that one explains in history of science? The phenomena to be explained may belong to specific episodes in history of science, e.g., why did Joseph Priestley refuse to accept and employ the principle of Conservation of Mass unlike Antoine Lavoisier? Or why did Isaac Newton work on alchemy for more than twenty years? Or why did the scientists decide to accept Darwin's theory and not Lamarck's? Or why are the Indian alchemical texts strewn with sexual metaphors? Or why did Europe provide the material and cultural grounds for scientific revolutions in the seventeenth century? Sometimes the questions are formulated with the expression 'how' and not with a 'why'. How did Newton arrive at the force law? Or how did Robert Millikan measure the charge of electrons? While the first of the how-questions is ambiguous in that it may ask for the details of Newton's arguments so that one can 'see' the conceptual development of the force law, the same question can also be answered by apparently delineating the social and economic roots of Newton's work as Borris Hessen had tried to do. The second how-question is more descriptive and the historians of science very often use the answer to this question in order to answer what they take to be a more well-formed question. Thus the details of Millikan's experiment were employed by Peter Galison to argue for his thesis that there are 'constraints' in performing experiments and also in bringing about an 'end' to an experiment. I have not said much about the why-questions raised above or about their general nature. I will have something to say about them and about the answers to the why-questions in the first section of this