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SPSP, June 2009

On the Very Idea of a Style of Reasoning

> Consider Hamlet's maxim, that nothing's either good or bad but thinking makes it so…. [B]y thinking, new candidates for truth and falsehood may be brought into being.
> — Ian Hacking, "Language Truth and Reason" [1]

> My Lord, there was no such stuff in my thoughts.
> — Rosencrantz, *Hamlet* [2]

While away at school, Hamlet never gives Denmark a second thought. When fellow students ask him what to make of his homeland, he answers not that it is difficult to say, but with blank stares. Denmark is not even a candidate for best or worst place to live; it's not the kind of thing that can be either good or bad; it's not good-or-bad. When Hamlet is back home, however, unable to ignore the coincidence between his father's recent murder and his mother and uncle's marriage, Denmark is good-or-bad. He is not quite sure whether Denmark is good or whether Denmark is bad—either conclusion would require an argument—but at least the question has crossed his mind. It would not be unreasonable or impossible to discuss, because his concern somehow guarantees that that the topic is at least "up for grabs," that Denmark could turn out to be good or could turn out to be bad.

This is Ian Hacking's interpretation of act II, scene ii of Shakespeare's *Hamlet*.[3] The young Prince's dwelling on his wretched life in Denmark is the very thing that legitimizes the

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[1] Ian Hacking, "Language, Truth, and Reason," in *Rationality and Relativism*, ed. M. Hollis and S. Lukes. (Cambridge, Mass.: The MIT Press, 1982), 48-66.

[2] William Shakespeare, "Hamlet," in *The Arden Shakespeare: Hamlet*, ed. H. Jenkins. (Surrey, United Kingdom: Thomas Nelson and Sons, Ltd., 1997).

[3] And it is a bold one, given one literary scholar's recommendation that the perplexed take heart in Samuel Coleridge's reaction to this scene, which was simply: "I don't understand this." (William Shakespeare, *The Oxford Shakespeare: Hamlet*, ed. G.R. Hibbard. [Oxford: Clarendon Press, 1987], 216-17, nn. 261-62.)

question of Denmark's status. The newfound concern does not determine Denmark's status; Hamlet can't make Denmark bad simply by thinking Denmark is bad. But his intense preoccupation with the issue makes it possible for Denmark to be bad. His concern creates an opportunity for debate on the topic, rather trivially, because without that focused attention, the issue of Denmark's worth would not appear in relief against the backdrop of the deeply mysterious. (Or, alternatively, without that focused attention, nothing would distinguish the issue of Denmark's worth from the infinitely many other debatable issues.) In several papers over the past twenty years, as a philosopher who interprets the theatrics of scientific practice, Hacking has suggested that scientists play the role of Hamlet. Their ways of theorizing — their styles of reasoning — cannot help but demarcate topics that are debatable and "topics" that are impenetrable. Just as Hamlet's focused obsession automatically makes Denmark a candidate for best or worst place to live, a scientist's style of reasoning cannot help but highlight a set of reasonable topics, or at least topics worthy of further discussion.

At the risk of overtaxing the theater metaphor, a style of reasoning is a spotlight. It shines its light on a portion of the world, and in doing so, separates whatever lies within its focus from whatever lies without. This is all it can do. A spotlight is only a machine; so there's no sense in which it organizes the world. It cannot select what appears within its view or arrange what lies within the highlighted area. There is no sense in which the spotlight fits the world either. The world is an undifferentiated tableau; and the completely separate light shines upon it. Given the spotlight's inability to make choices, it seems unfair for us to blame (or praise) it for highlighting one area over another. And to assess critically what lies within its focus, we would need an audience. But the spotlight, neutral as it is, remains crucial, for without it, nothing would stand out in relief for the audience to judge — all would be dark. The light marks a temporary and artificial boundary within which or about which a discussion can occur. And in this way, it makes the discussion possible.

Hacking's Idea.

Styles of reasoning establish a kind of boundary, but not the boundary between true and false. It is not Hacking's contention that different styles of reasoning make different kinds of facts or propositions true. That would be constructivism or subjectivism. Nor do styles locate the kinds of propositions that have definite truth values. Styles do not point toward sets of bivalent propositions, i.e. propositions that *are* either true or false, though we may not know which. Instead, styles confer positivity, a characteristic that precedes or is weaker than bivalence. Following Comte, Hacking suggests that styles identify sets of positive propositions, propositions that are up for grabs as true-or-false. Styles "introduce new ways of being a *candidate* for truth or for falsehood" (SHP 12; emphasis added).

In order to understand another style, theorists have to figure out which kinds of things their subjects take to be true-or-false, which involves figuring out the usual methods they employ to solve problems. For instance, figuring out that Paracelsus thought mercury salve might relieve syphilis, that it was at least something to discuss, involves figuring out that when approaching a problem, Paracelsus tries to locate something that might sign or connect both the cure and some aspect of the disease. In this particular case, the planet Mercury signs both mercury salve and the marketplace, which is where syphilis is contracted (LTR 60). Styles of reasoning are supposed to enhance our understanding of science by revealing why certain topics and puzzles failed to appear on anyone's radar.

Styles of reasoning are:

1. **general**, not personal. They are not discipline specific, like the more narrow "ways of seeing" that belong to Ludwig's Fleck's thought collectives (SHP 3). "[S]tyles do not determine a content, a specific science" (SHP 5). Many different disciplines employ the style of statistical reasoning, for example.

2. **not in the head**, but ways of working through worldly stuff;

3. **ahistorical**, in that they outlive their original historical instances;

4. not predictable or (in any sense) derivable, styles **emerge contingently**;

5. **dynamic**, styles can change or evolve;

6. immune to refutation, but **may become invisible** or "extinct;"

7. are not accidental, haphazard or one-time approaches, styles have **form, recurring structure**.

In order to end up with a philosophical criterion that determines whether something can count as a style of reasoning, Hacking adds to the above list of characteristics that styles:

8. must **introduce novelties**; "new ways of being a candidate for truth and falsehood" (SHP 12);

9. are **self-authenticating** or self-stabilizing.

Examples of styles of reasoning include: the Euclidean style, the experimental style, the laboratory style, the taxonomical style, the statistical style, the historical style, and the decision theoretic style.

Hacking's Styles are Unconstrained.

Hacking views his research program as "a continuation of Kant's project of explaining how objectivity is possible" (SHP 4). But there is an important difference between the two. Kant can give a special kind of defense for his demarcation project. He uses the idea that there is one world to make possible the notion of right reason, the notion that everyone could come to reason in the same (and thus right) way. The idea does not make this one right style of reasoning possible by making it happen, by bringing it into existence. Rather, the idea operates as a regulative constraint our practices. We know that if we have several reasoning styles, each of which generates a competing description of the world, all of the styles cannot be correct. So we

are forced to settle upon one style and one description on pain of absurdity. Without this transcendental presupposition, we would be at risk of deep disagreement. There would be nothing absurd about two different people concluding that the same statement has two different truth values, and both people being correct. Without the idea that there is one actual world, there would be no motivation to resolve disagreements. It is not that the absence of the regulative ideal makes agreement impossible. And as noted, it is not that the presence of the regulative ideal creates agreement for us. *We* have to do the negotiating, the whittling down to one view of the world. The idea simply informs us that we cannot rest until we locate some way of dividing the space of descriptions into a *single* "accurate" one and the rest.

Hacking is not a traditional realist. He does not associate the notion of accuracy with univocality. And he is not an internal realist. He does not use the idea that there is one world to regulate our descriptions of it. He believes his styles make objectivity possible by settling "what it is to be objective," what it is to be a truth of a certain sort (SHP 4). Each scientific style divides the space of things to talk about into those that are debatable and those that are not. But there is no regulative ideal in Hacking's work. And without the transcendental presupposition that there is one world we are trying to describe, Hacking's forcing of a distinction between reasonable and unreasonable topics seems premature. *Kant* barely has a reason to force us to divide the space of descriptions into one accurate description vs. the rest. The transcendental presupposition that there is an actual world, the notion that we have to presuppose there is a world in order to make possible univocal reason, loses all of its punch when you give up on the idea that there *should* be one way to reason. And despite Kant's defense in terms of peace, there are grounds for letting go of this commitment. But if Kant's dream of a perpetual peace is starting to lose its constraining grip on the contemporary world, Hacking is really in trouble, for he had no interest in pure reason in the first place. As a philosopher who has worked on many actual case studies, he has detailed many ways of reasoning. But if he is not trying to show there is one way of reasoning, through

the presupposition that there is one world to reason about, how can he insist upon dividing the space of topics into the reasonable and the nonsensical? What idea constrains this division in any particular case? First, why think there could be any group of topics all bound together as reasonable (true-or-false, or up for grabs) by some common style? Perhaps we need never unite a collection of topics in this way. Or, second, perhaps there are many, many ways in which the same collection of topics can be united under a style. Hacking does not specify what constrains the proliferation or underdetermination of styles, other than to say that historians should have the last word as to how many styles appear on the final list (LTR 51).

Hacking emphasizes that he is after scientific, not universal, styles of reasoning. But it is only because Kant was concerned with the latter that he was able to employ his special kind of argument. It seems unlikely that Hacking will be able to retain his commitment to diversity in styles of reason, while also continuing Kant's project. Nor can Hacking leave Kant behind: If he wants to argue that a style of reasoning has form, there must be some indication as to how this form is shaped; there must be some constraint that sets the bounds of the style or at least ensures that the different styles have distinctive boundaries. And where Kant's arguments regarding this matter are transcendental, Hacking's are contingent. This contingency is emphasized in characteristic four, the notion that there is no way to predict and surely no way to encourage or justify the emergence of a new style (SHP 17). A new style is born whenever someone finds a way to study a topic which once was thought to be impenetrable. There is no one logic of discovery, but several logics of discovery with no way to connect one to any other. There is an immediate reason why we consider one topic to be worthy of discussion and another to be completely mysterious, namely, some style identifies the topic as debatable. But, there is no reason beyond that immediate reason. The style that identifies the topic simply appears on the scene. In light of this contingency, it's not clear on what account of understanding the style meta-

concept actually deepens our understanding. The dream weaver himself despairs, "I am at pains to say this is not a kind of subjectivism" (DS 67).[4]

There might be a way for Hacking to avoid criticisms that capitalize on the fact that he seems to be engaged in some kind of boundary work. Once he tries to draw a boundary between the true-or-false and the not true-or-false, there is room for the skeptic to question what justifies this boundary, what justifies drawing this boundary in any specific place, or any place at all. Hacking might respond that he is not engaged in boundary work after all. Perhaps he never claims the topic is *not* nonsense, i.e. that we *definitely* can discuss it reasonably. Instead, he might say that styles identify topics that are not *necessarily* nonsense, because we have a style available for addressing them. If Hacking chooses to defend his idea this way, he runs the risk of trivializing it. The theory boils down to the proposal that when we have a way to approach a topic, we have a way to approach a topic. Well, I agree.

Self-Authentification or Pernicious Insulation?

Characteristics one through seven above have special legitimacy in virtue of their historical instantiation. But because they were read off a list of historical examples, they are not necessary and sufficient conditions (SHP 16, 19). Hacking aims to remedy this with eight, a necessary condition for all styles of reasoning, and nine, a constitutive condition for any individual style.

Regarding eight, styles must "introduce novelties…in an open-textured, ongoing and creative way" (SHP 12). Each style of reasoning "is associated" with a collection of novel candidates, which may include new types of objects, sentences, evidence, laws, possibilities, classifications, and/or explanations (SHP 11). And the introduction of a new kind of object is

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[4] "The Disunities of the Sciences" in *The Disunity of Science*, ed. P. Galison and D. Stump (Stanford: Stanford UP, 1996).

"open-textured" because as time passes, many different objects may come to fall under this one type.

Hacking does not explain why styles must introduce novelties in order to be counted as styles. But the implication is that through the introduction of a new kind of thing or topic of explanation a style gets its character or individuality: What is the laboratory style? It is whatever the kind of reasoning is that makes up the discussion of sprayable entities. What is the mathematical style? It is whatever the kind of reasoning is that makes up the discussion of postulated objects with derivable consequences. The characterization of the style must issue from the boundary line drawn around the new object or topic, the common features that make the object or topic a new *type*.[5] So far this should be okay with Hacking, for he notes styles need not chronologically predate their associated novelties (SHP 11). But now this is confusing. Hacking makes it clear that each style individuates a new kind of object by shining a spotlight on some new corner of the world; it is the style that marks the boundary of the *new kind*: He writes, "[T]he style introduces a new type of object, individuated using that style, and not previously noticeable among the things that exist" (SHP 11). "There simply do not exist true-or-false sentences of a given kind for us to discover the truth of outside the context of the appropriate style of reasoning" (SHP 13). But to figure out if an activity is a *style at all*, we need to locate a novelty, a new kind of object or topic, that the style introduces. There is a pretty tight circle here: Once we are discussing a new kind topic, once the topic is no longer so impenetrable that it fails to show up on any radar, we must be using a new style of reasoning. But we need a new style of reasoning to make possible the discussion of a new topic. This is exactly the kind of circularity Arhur Fine—and Sextus Empiricus, for that matter—count on finding whenever a criterion is closely examined: "[T]he circularity mode occurs when what ought to make the case for the matter in question has need of support from that very matter;" to which it naturally follows that "being

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[5] As was argued in the previous section, there are many ways to draw these boundaries, possibly too many ways.

unable to assume either in order to establish the other, we suspend judgment about both" (Mates 1996, 110). [6]

Hacking argues that this circularity is a virtue, for it means styles are self-stabilizing. Styles pick out topics we can discuss; and the topics we find ourselves able to discuss help to individuate styles. (The way Hacking describes the process is reminiscent of Rawls's reflective equilibrium). Self-authentification is a constitutive condition of individual styles, because we are to individuate styles by taking notice of the different techniques by which styles stabilize themselves. Philosophy is to become this study of "philosophical technology" (SHP 18). We are to determine how certain questions arise, how certain topics become puzzles for further investigation. We then are to uncover how the very collecting or grouping of these topics into a kind serves to reinforce the kind of investigative approach employed. Progressive accumulation of the truth does not explain the stability of science. Rather, stability is explained by the self-authentification of styles of reasoning: Styles pick out topics which, in turn, characterize or bound those styles. Once we are off and running in this circle, it is getting off that makes us dizzy. Figuring out that a sentence is false does not force us to abandon a style. Figuring out that a sentence cannot be decided, or has no truth value, does not force us to abandon a style. We only begin to look into new styles if we find that what we thought was reasonable to discuss actually cannot be discussed at all. And, of course, this is impossible. There is always some sense in which we can discuss anything.

As a response to the problem of individuation, Hacking writes that historians are to have the last word on the number and individuation of styles; along with the dates they first appear (LTR 51). He defends his use of Alastair Crombie's particular list of styles by claiming that any analysis of science developed with the help of his list is fruitful. When pressed about what this means, Hacking implies that we can use Crombie's list to create useful myths about history (SHP

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[6] Benson Mates, *The Skeptic Way: Sextus Empiricus's "Outlines of Pyrrhonism,"* trans. Benson Mates (New York: Oxford University Press, 1996).

7, 9). This may sound disappointing. But Hacking reminds us that there is not much else he can say. Because the styles presumably establish the very standards of truth and falsity, or what it is to be objective in some domain, there simply can be no question of whether we have characterized the styles correctly, whether we have located all of the styles, or whether we are hunting for styles at the right level of generality (that is, whether we have sliced the reasoning pie into the right number of pieces—one universal style, one style for each discipline, or some other division). There are two problems with this response:

First, Hacking himself allows that some things can be true-or-false outside of any style of reasoning (LTR 49). He acknowledges that philosophers have discredited the doctrine of observation sentences; but he clings to the general idea that "there is a common human core of verbal performances connected with what people tend to notice around them" (LTR 61). Statements such as Herschel's 'my skin is warmed' are candidates for truth-or-falsehood all the time (LTR 62). The following reads more into Hacking's work than is written on the page, but it seems there is an inescapable "everyday" style of reasoning that makes debate about this sentence possible.[7] The fact that we cannot abandon this style without abandoning reason period, means that we cannot (at least in many, many scientific contexts) see this statement as nonsense. If Hacking accepts something like this notion of everyday reasoning, he cannot claim there is a deep sense in which we cannot assess styles. We can use our everyday style(s) of reasoning as a check on our mythic list of scientific styles to see whether they churn out appropriate topics, that is, to see whether these specialized ways of reasoning spotlight the kinds of things we would also consider true-or-false by (every)daylight. Even more troubling, we might take Hacking at his

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[7] There is some textual evidence that Hacking holds this view, for he writes, "People everywhere make inductions, draw inferences to the best explanation, make deductions; those are not peculiarly scientific styles of thinking" (SHP 12), the implication being that these are styles, but not scientific styles.

word, agreeing that some things can be true-or-false *outside* of any style of reasoning.[8] But in this case, it is not clear why we would want to muddy up our thinking and practicing with styles of reasoning at all. Why try so hard to locate new candidates for truth-and-falsehood with affected styles when we apparently have candidates all around us already, topics that are up for grabs regardless of the season?

Second, but not unrelated to the previous comment, in order for the claim that there are *several* styles of reasoning to withstand scrutiny, it seems Hacking should have to prove there is no one universal style, that is, no one logic of discovery, no one way to generate worthy topics for debate. This would have to involve waiting for suggestions and disarming them by locating some kind of diversity within the proposed universal style's unanimity. (For it seems difficult to prove something doesn't exist. There are far too many hidden corners in which to look.) But it would be hard for Hacking to claim in the midst of this waiting game that no-one-style-yet guarantees no-one-style-ever. His best response to these objections would be to point out that the more styles, the more kinds of things to debate, and the more issues settled. But once again, critics could question why we ever would want to stir up such artificial controversy. The world is contentious enough as it is (without forcing some portion of it into a falsely divisive spotlight).

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[8] There is textual evidence for this view as well. Hacking writes, "We can tell a good deal without much speculation, reasoning, or active reordering of and intervention in the world. That means: we do not need *any* style of reasoning to find out lots of things, because we do not need, literally, to reason. We can just go and look, and find out whether some sentences do in fact correspond to the way the world is.…*I do not think styles of reasoning come into play for sentences to which a correspondence theory applies*" (SL 133). This passage seems to demonstrate clearly that Hacking does not support the idea that there is an everyday style of reasoning, not because different people reason differently, but because there are times for every person when he or she does not reason at all. But this is unclear. Why *not* say that when operating under the everyday style, the kinds of sentences that are true-or-false are those which contain "short words" which express or designate the "'basic-level' concepts that are relatively stable among languages," or that the everyday style consists of "just looking" (SL 134)? Why exactly is the difference between just looking and reasoning?

Virtues.

The very idea of a style of reasoning has much to recommend it. Unlike explanationist defenses of realism, Hacking implies that he is not using inference to the best explanation to defend the notion of a style. We do not accept the style idea because it explains scientific change, for there are historical situations—the extinction of a style, the merging of two styles, the triumph of a new style over an old one—which his concept cannot explain. He champions neither external nor internal explanations of scientific change exclusively. Instead, he writes, "Style is a more metaphysical concept, important for understanding truth-or-falsehood once a style has become autonomous" (SHP 16). In other words, once a style becomes independent of the topics that initially serve to constitute it, we can use the style to explain why we consider certain other (later) topics debatable. But we are not to accept the style idea solely on the basis of this particular explanatory ability. Hacking's idea also attempts to explain why the scientists of certain eras cannot solve certain problems, namely, because the wrong topics of explanation are illuminated. And the self-authentification aspect of his theory attempts to explain why it is often so difficult to abandon current topics of explanation and identify new topics, why the standards of objectivity are in some sense *standards*. In short, we do not accept the style idea because it is the best explanation for some phenomenon. We accept it because it does a decent job of explaining several different phenomena.

The style idea has other virtues. Within this climate of massive information, long before grounding our beliefs, it might be useful to think about the ways in which we select or highlight information. Hacking's style idea contributes to this effort by suggesting that there is a (rather unsurprising) connection between the topics we address and the methods we employ for addressing them.

Moreover, the style idea, because it involves the boundary between the true-or-false and the not true-or-false (versus the boundary between the true and the false), leaves room for a

universal theory of justification. Even though there are many styles of reasoning, many ways of highlighting an issue as debatable, there might be one way of resolving issues. Different styles spotlight different puzzles, but this does not mean there are different ways of solving those puzzles, of showing which answer to the puzzle is justified.

Hacking draws a sweeping moral from his list of criteria. He argues that most contentious debates within the philosophy of science are mere artifacts of some particular style of reasoning. What we can possibly understand is predetermined automatically by the style of understanding with which we approach the world. Thanks to the style idea, we will be able to resolve most philosophical debates simply by encouraging theorists to publicly proclaim their underlying theory of understanding, i.e. what they think counts as understanding, how they think puzzles generally are to be solved (by locating a cause, drawing a unifying connection, etc.). Here is a better idea, a critic might say: refuse to frame general theories about how puzzles are to be solved. That way, by Hacking's own admission, there will be nothing (no kinds of objects, topics or sentences) over which to dispute.

A Better Objection to the Very Idea of a Style of Reasoning.

Hacking's styles survive Davidson's critique, because schemes do not have to be incommensurable to be different. Instead, we might distinguish schemes by identifying different topics as true-or-false. We have some inkling that a topic is up for grabs when we finally have the (physical or conceptual) tools to, well, grab it. Hacking does a fine job of demonstrating that understanding involves more than translation. Indeed, understanding even involves more than Davidson's interpretation. But he errs by suggesting yet another theory of understanding—manipulation. Two people understand one another when they manipulate or work through things in the same way. (Again, this manipulation is not necessarily physical. In the laboratory style, it happens to be physical, but in the statistical or mathematical styles, the manipulation is

conceptual.) By specifying exactly what we have to do in order to understand another person, era, or culture, he opens the door to Fine's NOAers. These modern day Pyrrhonians will argue that the criterion for individuating styles of reasoning depends for its efficacy on the existence of novel kinds that are generated by the very styles in question. This is enough to lead a NOAer to *epochē*. Hacking might spend less time in a darkened theater working his spotlight and more time in more natural light of the real world (where the "r" here is a boring and unobtrusive lower-case).

Earlier, Hacking characterized the style idea as a continuation of Kant's project of explaining how objectivity is possible, but in many respects, the style idea seems more Wittgensteinian, in that different background styles of reasoning, like the rules of so many games, establish the bounds of possibility without telling you which moves to make. Their central purpose is, rather, to make mistakes possible, to deem certain moves, certain questions, illegitimate. In *On Certainty*, when Wittgenstein is considering the language-game of "knowing" (that is, how we use the words "I know"), he writes: "When a child learns a language, it learns at the same time what is to be investigated and what not. When it learns that there is a cupboard in the room, it isn't taught to doubt whether what it sees later on is still a cupboard or only a kind of stage set" (*OC* 62).[9] There are certain topics which styles of reasoning highlight as candidates for meaningful discussion. Without those styles, all would be dark, undifferentiated: "…[T]he *questions* that we raise and our *doubts* depend on the fact that some propositions are exempt from doubt, are as it were like hinges on which those turn" (*OC* 44). It is the style-to-topic determinism of Hacking's idea that NOAers will question, along with the lack of any effective constraint on our theorizing about styles.

The Natural Ontological Attitude is an approach to the realism/anti-realism debate or, better, a state of mind produced by the debate, rather than a competing theory. This point has

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[9] Ludwig Wittgenstein, *On Certainty*, eds. G.E.M. Anscombe and G.H. von Wright, trans. Denis Paul and G.E.M. Anscombe (Harper Torchbooks: New York, 1972).

been lost on several commentators who attempt to argue that NOA is either a form of realism or a form of anti-realism. (NOA has been miscast as a minimal form of realism with an indispensability criterion, for example.) In fact, it is better to think of NOA as a person, as its personified name suggests, someone you come to trust gradually through your mutual interactions. Because NOA is not a doctrine and because NOA was introduced to encourage theorists to stop trying to ground doctrines, it would be deeply misleading to defend it, which is why philosophers cannot seem to get a grip on it. They might try a bit harder, for it is an important skeptical approach with a long history, an approach one might adopt toward any philosophical question.

NOAers are contemporary Pyrrhonians. Their negative arguments identify lofty criterions that cannot be defended on pain of circularity, regress, or presumption. And their positive position is not a position at all, but an attitude, a disinterest in the hunt for criteria and a general feeling of suspense when it comes to theories about the nature of things. Fine calls it "California natural." In Sextus Empiricus's classic version, "*epochē* is a state of the intellect on account of which we neither deny nor affirm anything," because we have found the two theoretical options—for example, realism and anti-realism—to be equipollent, while "*Ataraxia* is an untroubled and tranquil condition of the soul" which results (Mates 1996, 90). One might think that denying realism makes one an anti-realist, but not so, according to Sextus, who writes:

> Those who claim that the Skeptics deny appearances seem to me not to have heard what we say. For, as we stated above, we do not reject the things that lead us involuntarily to assent in accord with a passively received *phantasia*, and these are appearances. And when we question whether the external object is such as it appears, we grant that it does appear, and we are not raising a question about the appearance but rather about what is said about the appearance; this is different from raising a question about the appearance itself. For example, the honey appears to us to be sweet. This we grant, for we sense the sweetness. But whether it is sweet we question insofar as this has to do with the [philosophical] theory, for that theory is not the appearance, but something said about the appearance (Mates 1996, 92).

The NOAer and the Pyrrhonian skeptic report immediate appearances, how things seem to them, but they do not to make theoretical pronouncements. They are not Wittgensteinians, because there is no attempt to conceptualize about the background, bedrock, or riverbed. We do not live and work in "contexts" (like styles of reasoning or Kuhnian paradigms). We live in the actual, undifferentiated, complicated, natural world (not the Real one). This choice to remain local and natural in one's reports is not a theory in itself, it is simply a report of the attitude with which the NOAer lives:

> Concerning the "I determine nothing" we say the following. We think that "determining" is not simply saying something but rather is putting forward and assenting to something non-evident. Thus, I suppose, the Skeptic will be found not to be determining anything, not even the slogan "I determine nothing" itself. For that slogan is not a dogmatic opinion, that is, an assent to the non-evident, but rather it makes evident our *pathos*. Whenever the Skeptic says "I determine nothing," he is saying this: "I am not in such a state of mind as neither dogmatically to affirm nor deny any of the matters in question." And this he says, reporting what appears to him concerning the matters at hand, not dogmatically and confidently, but just as a description of his state of mind, his *pathos* (Mates 1996, 116).

The Pyrrhonian skeptic does not stop thinking, but rather stops reflecting on life in a certain forced, non-evident way. Similarly, NOA is committed to the existence of individuals, properties, relations, processes and whatever else is "referred to by the scientific statements we accept as true," but NOAers can also handle Kuhnian revolutions or "wholesale changes of reference," because they are free to change their beliefs about existence as new facts become known (Fine 1986, 130-31). [10] The attitude "does not force the history of science into pre-fit molds," in part because it allows scientists to remain agnostic about the existence of entities when the facts underdetermine (Fine 1986, 131). One problem with Hacking's style idea is that it tries to push the history of science into such a mold. The history of science is the history of styles replacing

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[10] Arthur Fine, *The Shaky Game* (University of Chicago Press: Chicago, 1986).

one another for no apparent reason. But if the birth, death, and evolution of a style is haphazzard, then it is unclear how such conceptual cartography can constitute an interesting history of science. Hacking's organizing principle adds nothing to the bare history.

The more devastating philosophical problem is that styles are unconstrained. There is nothing to stop us from inventing styles in order to make whatever topics we wish to puzzle over mysterious. If we want to puzzle over the issue of John F. Kennedy's death, for example, we might invent an astrological style of reasoning that problematizes this event. We can put any topic into conversation with any style. We might employ the astrological style to highlight the breakup of a Hollywood marriage as a topic in need of discussion. But we might also employ the astrological style to rationalize our investigation into volcanic activity in Hawaii. Hacking argues that styles identify topics, but he offers no theory of why a style shines its light on one particular part of the historical stage rather than any other. The theory suggests that new technologies make new courses of investigation possible. In other words, new topics or kinds are bounded by new equipment and new methods of manipulation. But this is trivial. The only possible lesson here is that we ought to note how the technology we hold dear really limits the kinds of issues we can consider puzzling. A NOAer would be unimpressed. Technology or no technology, we are always open to consider other issues or approach other topics as puzzling, if we have some reason (any reason) to consider them so. Our technology does not limit us or make certain debates possible. It allows us to shine a red light on meter 346X or mark different parts of someone's brain with different colors.

As Fine writes:

> [I]f science is a performance, then it is one where the audience and crew play as well.… The script, moreover, is never finished, and no past dialogue can fix future action. Such a performance is not susceptible to a reading or interpretation in any global sense, and it picks out its own interpretations, locally, as it goes along (Fine 1986, 148).

Fine has more faith in our own ability to identify topics worthy of discussion without the use of conceptual pointers. Understanding science need not involve "global interpretations," "idle overlays," or "invariant" organizing principles, like styles of reasoning (Fine 1986, 149). It is deeply unnatural to view science as entertainment. Philosophers are not to shine their lights on the action and watch it unfold. Rather, we are all to join the performance, thereby eliminating the artificial boundary between actor and audience, which we mistakenly call upon to reinforce the notion that the raw material of science constrains our reflections about it. Hacking's approach to the study of science (and Davidson's approach to understanding, for that matter) belies a regimented and ultimately pessimistic view of human curiosity, It may be that we don't need guide rails and constraints to live together, to understand one another, and to understand science.

Instead of watching "Hamlet" from a darkened place in the back row, Fine takes on the role of Rosencrantz, who later points out in Hacking's crucial scene that it is not Hamlet's *thoughts* after all which make Denmark a terrible place. Hamlet's airy dreams make Denmark seem so dark. And as Hamlet himself points out in Act II, scene ii, "A dream itself is but a shadow."