

Foucault and the Critical Tradition¹

KORY P. SCHAFF

Department of Philosophy, University of California, San Diego, CA, USA
(E-mail: kschaff@ucsd.edu)

The present paper motivates one possible answer to the question, “What remains of the Enlightenment?” by reinterpreting the relation between Foucault and the critical tradition. The Enlightenment has left us with “normative superstition,” or a healthy form of skepticism about the justification of modern institutions and ideals. Along these lines, I adopt an interpretation of Foucault that diverges from the standard view. I argue that he shares with his detractors a common heritage of the “critical attitude,” placing him squarely in line with Kant, Hegel and critical theory generally. If it is possible to view this critical attitude as an expression of Enlightenment-oriented views, then there are reasons to believe that his so-called postmodernism is nothing more than hyper-modernism. The general lines of this last argument have been made elsewhere, most notably in Robert Pippin’s important work, but there is a need to situate Foucault in the unfolding narrative of modernity, rather than label him a hostile opponent to it (Pippin, 2000). In my view, the “Foucault addiction” now so popular is a consistent expression of the critical tradition and the aim here is to develop this point.

1. Kant and the Critical Attitude

Kant was not the first to express the ideals of the Enlightenment, but his formulation perhaps captures them best. In the essay *Was ist Aufklärung?*, he defines enlightenment as “the human being’s emergence from his self-incurred rational immaturity” (*Unmündigkeit*).² He continues by clarifying what he means by this:

Rational immaturity is the inability to make use of one’s own understanding without direction from another. This immaturity is *self-incurred* when its cause lies not in the lack of understanding but in the lack of resolution and courage to use it without direction from another. (1996, p. 17)

The formulation is the common notion of freedom as self-determination, or refusing to accept as reasons for judgment and action mere appeals to the authority of tradition. In the case of Enlightenment defenders, the authority

at issue concerns religion and constitutional constraints on political power. By contrast, the Enlightenment is to be characterized by the self-legislating authority of reason, and modern institutions are to be organized and justified according to its demands.

Now consider Nietzsche's similar statement made a century after Kant: "A very popular error: having the courage of one's convictions; rather it is a matter of having the courage to *attack* one's convictions" (1920–29, p. 318). The figure most associated historically with attacking the values of the Enlightenment also expresses a similar commitment to its critical attitude. The question that troubles postmodernists is whether something like this critical attitude can sustain its own tradition without implicitly relying on the authority of religious and social convention. For better or worse, Foucault has been associated with the answer that the criticism so prominent in the Enlightenment is exhausted, and that the concept of "man" so central to modernity will wash away like a face in the sand. The tension Foucault faces as a critical theorist is thus whether and how the modern critical attitude can be brought to bear on itself. Along similar lines, Foucault argues that the questioning of the self is the substance of critique: "I will say that critique is the movement by which the subject gives himself that right to question truth on its effects of power and question power on its discourses of truth" (1997, p. 32). And this tension between subjectivity-objectivity, or form and content, is basic to the critical attitude of post-Kantian philosophy, most notably Hegel and his influence on Marx and critical theory.

What remains of the Enlightenment today? Apparently, enough of its own critical attitude remains to warrant guerrilla warfare against its uncritical acceptance in our institutions and norms. Put another way, the more criticism is made against it, the more tightly the Enlightenment holds sway over our basic normative commitment to what McDowell calls our standing obligation to reflect (1996, p. 40). In the view of many, Foucault represents an insidious viewpoint that embraces nihilism and undermines the normative foundations of our modern institutions. Despite his critics, however, Foucault's thinking continues to enjoy an immense popularity and there is no immediate end in sight. Even as his ideas and writings are taken up to serve ends, which he himself did not foresee (and sometimes did not endorse), Foucault's critical attitude continues to influence our understanding of modernity and its discontents. Like the use of a drug fueled by the existential imperative to think differently, Foucault's overarching theme to amplify the modern experience of criticism has made him the popular addiction.

Using this metaphor, which I think Foucault would have liked, it is my claim that what remains of the Enlightenment is an addiction to the critical attitude that engenders and sustains itself. The Enlightenment attempt to free human understanding from the burden of irrational tradition succeeds with the advent of science and democracy, and Foucault continues this project against

the modern superstition that our normative commitments to freedom can be sustained without constantly reproducing that critical attitude. In short, the Foucault addiction is a symptom of Enlightenment discontent not to be determined solely in the present just because it is continuous with the past.

2. Foucault's Critics

One standard criticism against Foucault is that he rejects a normative ground for his analysis of power and is incoherent, conservative, or even politically quietist. One description, that he is a kind of "left libertarian," has the dubious distinction of being incoherent itself (Beiner, 1995, p. 65). Foucault's critics, at least those professing to defend Enlightenment ideals, unfailingly attribute to him a fatal error that, in my view, he does not commit. The error is that he does historical analysis without a normative framework, or that he reconstructs "true accounts" of historical events when is making implicit normative judgments all along. This error, which the political theorist Ronald Beiner calls "Foucault's hyper-liberalism," is the shared assumption of most (if not all) of his critics (1995, p. 65).³ If we can raise significant doubts about this claim, then Foucault's relation to the Enlightenment can be rehabilitated. Contrary to some interpretations, he does have normative commitments that place him squarely in line with the post-Kantian critical tradition. I attempt to state this more clearly after examining his critics and their objections.

According to most of Foucault's critics, the knowledge-power relationship is the main obstacle to the coherence of his project. For example, Beiner argues that the "perspective of political philosophy" should contribute "to our understanding of what constitutes a desirable human life, and of how society should ideally be constituted in order to facilitate the living of such a life" (1995, p. 65). In short, we need to state explicitly the kinds of ideals that ought to demand our allegiance, and articulate what institutional arrangements best achieve and sustain those ideals. I accept this basic formulation as well. The question is, what specifically is objectionable about Foucault's work on this score?

The mainstay of criticisms against him are almost always organized around the central error he allegedly makes by refusing to endorse a normative framework. Let us call this the non-normative commitment (NN). Still other critics claim that Foucault does, in fact, subscribe to a normative framework that he suppresses. This is the suppressed-normative thesis (SN). Finally, when critics expose that implicit framework, the views are often characterized as unsavory, incoherent, or dangerous in their implications. Let us refer to this as the dangerous-normative thesis (DN). We now have a workable set of related claims that Foucault's critics might hold either together or individually.

- (NN) Foucault claims to be descriptive and refuses to endorse a normative framework,
 (SN) but in fact he suppresses his normative commitments,
 (DN) which are morally dangerous or politically disquieting.

Both NN and SN concern the shared question of whether and how Foucault subscribes to some set of normative views that can be detached from historical analysis. Beiner attributes this distinction between description and evaluation to Foucault's postmodern "negativism," or a profound skepticism of all normative ideals based on their perceived failure (1995, p. 65). Another commentator calls this the "postmodern consensus" (Johnson, 1997, p. 559).⁴ Foucault's ideas are targeted as a member of this group, and many claim, as a result, that he has little or nothing of serious value to offer.

In my view, what really must be objectionable about Foucault's views is neither NN nor SN. Rather, the real motivation for criticism is DN, namely, that the normative commitments themselves are problematic. If Foucault thinks that everything is a matter to be settled by power, then surely he is a proponent of anarchism, right? Even Charles Taylor's somewhat careful treatment of Foucault is ripe with underlying aversion to his so-called "Nietzschean programme" (1984, p. 90). To this extent, NN and SN are irrelevant and merely obfuscate what is the real issue: the critical attitude turned back on itself. If his normative commitments are what is at issue, then the allegedly fatal error he is accused of making is not that of uncoupling evaluative judgments from historical analysis. The real issue is the normative commitments themselves, or at least their implications, so all the claims of "hyper-liberalism" and "postmodern consensus" appear to be red herrings.

This is my suspicion, motivated somewhat by the paradoxical fact that his critics have constantly claimed he provides no normative grounds to his historical analysis, even though they have no trouble advancing a series of interpretations that inevitably show that he does. Moreover, those grounds are troubling, either because Foucault turns out to be too radical or not radical enough, depending on the position they occupy. One wants to ask if the "real" Michel Foucault would please step forward so we can get clear about this. The incompatibility of the many labels attributed to him raises doubts that any one of them is correct. The sheer incoherence of calling him both an "anarchist" of the left-wing libertarian strain or attributing to him a "conservatism" resulting in political quietism speaks for itself. Even while some critics ambiguously agree that his empirical insights are important, they reject their usefulness on the grounds that without a normative framework such insights are useless (Fraser, 1989). Beiner, for example, attempts to demonstrate how Foucault's last research into sexual practices in antiquity embodies a kind of left-libertarianism in which so-called "self-fashioning" is just "narcissism minus truth" (1995, p. 78).⁵ But how does Beiner's own claim avoid the easy and cheap

charge of "narcissism disguised as dogmatism"? It is one thing to argue that Foucault's analyses are historically inaccurate, which has been done and not always successfully. It is entirely different to argue that the analyses necessarily commit him to one normative framework rather than another, and this question has been conveniently ignored by most of his critics.

3. Foucault's Commitment to Critical Norms

Although there is probably not one project that Foucault is undertaking, there are overlapping themes among the different approaches he takes from *Madness and Civilization* to *The Care of the Self*. One prominent theme in his earlier work concerns "unmasking" the Enlightenment conception of reason as normatively neutral. The question arises whether "truth," thought of as some correspondence between thought and the natural world, can ultimately be understood solely in naturalist terms. Foucault seeks to show that even something like the "naturalization" of the human sciences, as in biology, are not constructed without the influence of some kinds of social determination. Moreover, the notion of teleology, that we get closer to the "truth" as we make scientific and technological progress, is also scrutinized. Foucault's study of the relation between knowledge and power in later texts continues this research theme, but it is directed to the social domain of institutions and norms. The question here is whether and how historical formations of knowledge and information emerge based on socially validated consensus, and how they are justified and stabilized by normative commitments. For example, in *Discipline and Punish* Foucault aims to chart the emergence of penal institutions along with the "disciplines," or models of social organization aimed at efficiency, productivity, utility, and visibility. As he states in an interview, "I have been trying to make visible the constant articulation I think there is of power on knowledge and of knowledge on power . . . we should add that the exercise of power itself creates and causes to emerge new objects of knowledge and accumulates new bodies of information" (1980, p. 51). Thus, one underlying theme running throughout Foucault's work concerns the relation and reciprocal influence between theoretical and practical reason. From this perspective, his research interests are consistent with much post-Kantian critical philosophy.⁶

The tools of Foucault's research are chosen with some caution, reflecting his commitment to uncouple Enlightenment teleology from socio-historical analysis. The point of this is to continue the essentially Enlightenment-inspired historicization of reason. Archaeology thus distances itself methodologically from typical explanatory models that appeal to some transcendental subject of reason in order to "account for the constitution of knowledge, discourses, domains of objects, etc." (1980, p. 117). The idea of genealogy is even more

precautionary, because it does not appeal to some fundamental normative framework in order to evaluate and defend certain values or facts. Rather, it attempts to chart the dual emergence of such frameworks with the values and facts that are being defended and explicated. He claims,

I adopt the methodical precaution and the radical *unaggressive scepticism* which makes it a principle not to regard the point of time where we are now standing as the outcome of a teleological progression which it would be one's business to reconstruct historically. (1980, p. 49; emphasis added)

The kind of global skepticism he is often charged with, that there is only power where there is "truth," is simply not the skepticism embodied by his research and arguments. He describes the kind he practices as "that skepticism regarding ourselves and what we are, our here and now, which prevents one from assuming that what we have is better than—or more than—in the past" (1980, p. 49). This statement reflects just the kind of critical attitude formulated by Kant and extended by others. Even though Kant defends the Enlightenment as something better, from a teleological perspective, than past efforts at human emancipation, the same critical self-awareness is basic to both the teleological and non-teleological positions. By contrast, Foucault's research program is anti-essentialist and non-teleological, and he advances a methodology not much different than standard empiricist paradigms (Gutting, 1989, pp. 268–272). Foucault claims that his work has little if any direct implications for the exact sciences: "I would not make such a claim for myself. And, anyway, you know, I'm an empiricist: I don't try to advance things without seeing whether they are applicable" (1988, p. 106).

Advancing the research program on the relations that hold between knowledge and power is done through analysis of what is problematic about current states of affairs, or what he calls doing "a history of the present" (1977, p. 31). It is here that Foucault's normative commitments are most relevant to the present discussion. What he claims to demonstrate in *Discipline and Punish*, for example, is that knowledge of the "truth" is reciprocally influential on practical activity. This reinforces the idea that collective action can be both justified and developed through refined theoretical reflection. He argues that the "exercise of power perpetually creates knowledge and, conversely, knowledge constantly induces effects of power . . . It is not possible for power to be exercised without knowledge, it is impossible for knowledge not to engender power" (1980, p. 52; cf. 1977, pp. 76–77, 220–221; 1978, pp. 92–97; 1997, pp. 51–53). Foucault wants to unmask the pretension that knowledge and truth are independent from action, specifically the organization and management of the activities of the body. Indeed, these things are intractably tied to the organization of collective action, since the individual body and body politic are induced to produce and made malleable to control. The project does have normative commitments because it demonstrates to what degree new and ever-

present threats of subjugation that have arisen historically go unnoticed by Enlightenment conceptions of truth and knowledge as neutral to such concerns. In short, he historicizes the norms of criticism to the extent that such norms are tied to ever-developing institutions and technologies.

Foucault's claims about knowledge-power relations are not incoherent on this account. Knowledge and power are not co-extensive, as the standard objection of "everything is reducible to power" would have it. Foucault claims that "studying their *relation* is precisely my problem. If they were identical, I would not have to study them and I would be spared a lot of fatigue as a result. The very fact that I pose the question of their relation proves clearly that I do not *identify* them" (1988, p. 43). Rather than assuming that one's view of history proceeds without reference to normative frameworks, Foucault wants to ask to what degree those frameworks and historical events are products of such relations. On his conception, "power" is to be distinguished from the standard view of "power as sovereignty" so central to Enlightenment conceptions. Power is more than the exercise of control by one individual or group over another. Put a better way, power is not reducible to these relations of coercion or control (cf. 1977, pp. 218–220). Foucault's conception of power includes both a negative and positive component. So it represents any relations or circumstances that "produce" certain social alignments, coordination, modes of comportment, and the formation of knowledge and bodies of information relative to these. The traditional thesis that power is repressive is abandoned as an insufficient explanation for understanding its effects: "the notion of repression is quite inadequate for capturing what is precisely the productive aspects of power" (1980, p. 119).

By refining outdated conceptions, Foucault widens the available domain of explanation for understanding how events occur in a historical framework. There is nothing in this strategy that jettisons "truth" or advances criticism without normative commitments. The Foucault addiction need not devolve into intellectually irresponsible, wholesale critiques of where we are, historically, and whether it can be justified. (Admittedly, much postmodernism seems to commit just this kind of mistake, which is odd considering the constraints on criticism affected by historicizing reason). Foucault is continuing the idea of *Kritik* begun by Kant's defense of modernity and carried forward by other social commentators. This is a commitment that Foucault thus shares with his Enlightenment counterparts. The purpose of critique is to demonstrate that a certain concept is misconceived (the negative) and to free it from such misconceptions in order to take new directions (the positive). In his lecture, *What is Critique?*, Foucault gives context to this tradition by engaging Kant's Enlightenment essay. He intends to investigate the "critical attitude" that a certain form of knowledge manifests in refusing to be "governed *like* that, by that, in the name of those principles, with such and such an objective in mind and by means of such procedures, not like that, not for that, not by them" (1997,

p. 28). Foucault's many projects embody the kind of critique defined by Kant himself, and it echoes the same concerns Kant had to free ourselves from self-incurred rational immaturity. These norms of criticism are thus no different in kind to those shared by the post-Kantian critical tradition. What are different perhaps are the relations, domains, and spaces to which criticism is directed, which is an obvious and uncontroversial historical necessity.

At this point, Foucault might run afoul of the Enlightenment tradition by questioning "truth" or the forms of knowledge, which are assumed to be in the service of human emancipation. An additional and important difference is this: we can no longer think in terms of "liberation" or "emancipation." Rather, we have to think in terms of "resistance" if we really comprehend and act upon the relations that hold between knowledge and power. Why? According to Foucault, the relations that hold between these two domains are such that they have no independent status. Ideas and action essentially depend on one another (cf. 1997, p. 52). The impossibility of treating these issues in isolation from another is the real advance made possible by Hegel's rejection of Kant's dualism between theoretical and practical reason. Perhaps this is why Foucault's critics object to his normative commitments. In the very service of the Enlightenment, he demonstrates that its adherents continue to work on problems that remain so only because they are not properly framed. They need a new drug to induce superstitions about their own theoretical and practical presuppositions. Perhaps traditional Enlightenment conceptions are ill equipped to handle the kinds of critical norms necessary for understanding the current predicaments of agency in the context of modern historical developments. There are thus strong reasons to place Foucault in the tradition of the Frankfurt School and others who also felt the need to think through the limitations of our ideals as a result of world-shaping events like the Holocaust.⁷

4. Conclusion

I have argued that Foucault's commitments to critical norms, contrary to received views now so prominent, are nominally those of the Enlightenment. There is a proviso to this "unfashionable" reading: truth and knowledge can no longer claim an independent and neutral status to social processes and concerns. Certainly, this is one reason why contemporary analytical philosophy finds Foucault so distasteful. By tying him to the "postmodern consensus," they reinforce the idea that such normative commitments to the further historicization of reason are like those of Bazarov in Turgenev's *Fathers and Sons*, an alleged nihilist for whom "nothing is true and everything is permitted." Given the commitments he has to norms of critical reflection, however, we should resist resorting to caricatures, even where a thinker's work does

not conform to the sometimes elegant and often impoverished standards of well-formed statements. Certainly, Foucault is not always easy to read and his skeptical, sometimes obfuscating, and often hyperbolic analyses may turn the stomachs of those who are used to arguments with precise logical structure. If this is disconcerting, then it is also important to acknowledge that knowledge and power are intractable. At the very least it requires more serious study. For if knowledge of the "truth" can liberate us, as the Enlightenment holds, then conversely it can enslave us as well. No doubt this is a hard drug to swallow, which explains in part why Foucault's detractors resist taking it.

Notes

1. I would like to thank Andrew Cutrofello for a seminar on Foucault's early writings at Loyola University Chicago, and for commenting on an earlier version of this paper. In addition, thanks to David Ingram of Loyola and Jim Bernauer of Boston College for interesting conversations which helped to develop my understanding of Foucault's relation to the critical tradition.
2. I have chosen to change the translation of *Unmündigkeit* from "immaturity" or "minority" to "rational immaturity" in order to express more clearly the *lack* of normative development the word connotes.
3. I have in mind here a cross-section of critics who claim that without articulating his normative commitments, Foucault's "analytics of power" cannot object to subjugating practices, since no criterion exists to distinguish between "good" and "bad" ones. See Walzer, 1983, pp. 481–490; Taylor, 1984; Habermas, 1987, Ch. 9–10; Fraser, 1989, Ch. 1–2; Wolin, 1988, pp. 179–201.
4. Johnson's "unfashionable" reading of Foucault is refreshing because he attempts to debunk NN. The interpretation he advances, however, connects those commitments to decidedly Habermasian grounds of communicative discourse, which is compelling despite the problems posed by such a reading. For an excellent discussion of the similarities and differences between the two, see Ingram, 1994.
5. In my view, Beiner's polemic (an essay counts as such if the number of exclamation points exceeds three or four, and his has exactly seven!) rides dangerously close to a kind of veiled homophobia. The real issue is not so much Foucault's last works as a celebration of sexual narcissism, as Beiner views it, but rather the threatening content of the discussion, i.e. the historical status and normative justification of same-sex male relations.
6. Although his connection with Nietzsche is both obvious and important, I think it is also vastly overstated. Consider Foucault's own remarks on Marx, for example: "But I quote Marx without saying so, without quotation marks, and because people are incapable of recognising Marx's texts I am thought to be someone who doesn't quote Marx. When a physicist writes a work of physics, does he feel necessary to quote Newton and Einstein?" (1980, p. 52). Furthermore, one should not underestimate Hyppolite's Hegelian influence on Foucault. For a good discussion of the Nietzsche-Foucault relation, see Thiele, 1990 and Ansell-Parson, 1995. For an attempt to link Foucault's historicist concerns with Hegel, see Schaff, 2002.
7. See Horkheimer and Adorno, 1972; Marcuse, 1998; for indications of shared concerns between Marcuse and Foucault, see Schaff, 2002.

References

- Ansell-Parson, K. (1995). The Significance of Michel Foucault's Reading of Nietzsche: Power, the Subject, and Political Theory. In P. Sedgwick (Ed.), *Nietzsche: A Critical Reader*. Oxford: Blackwell.
- Beiner, R. (1995). Foucault's Hyper-Liberalism. *Critical Review* 9 (3).
- Foucault, M. (1977). *Discipline and Punish*. Trans. Alan Sheridan. New York: Vintage.
- Foucault, M. (1978). *The History of Sexuality*, vol. 1. Trans. Robert Hurley. New York: Vintage.
- Foucault, M. (1980). In C. Gordon (Ed.), *Power/Knowledge: 1972-77*. New York: Pantheon.
- Foucault, M. (1988). In L. Kritzman (Ed.), *Politics, Philosophy, Culture: 1974-84*. New York: Routledge.
- Foucault, M. (1997). In S. Lotringer (Ed.), *The Politics of Truth*. New York: Semiotexte.
- Fraser, N. (1989). *Unruly Practices: Power, Discourse, and Gender in Contemporary Social Theory*. Minneapolis: University of Minnesota Press.
- Gutting, G. (1989). *Michel Foucault's Archaeology of Scientific Reason*. Cambridge: Cambridge University Press.
- Habermas, J. (1987). *The Philosophical Discourse of Modernity*. Trans. Frederick Lawrence. Cambridge: MIT Press.
- Horkheimer, M. and Adorno, T. (1972). *The Dialectic of Enlightenment*. New York: Seabury Press.
- Ingram, D. (1994). Habermas and Foucault on the subject of reason. In G. Gutting (Ed.), *The Cambridge Companion to Foucault*. Cambridge: Cambridge University Press.
- Johnson, J. (1997). Communication, Criticism, and the Postmodern Consensus: An Unfashionable Interpretation of Michel Foucault. *Political Theory* 25 (4).
- Kant, I. (1996). An Answer to the Question: What is Enlightenment?. In M. Gregor (Ed.), *Practical Philosophy*. Cambridge: Cambridge University Press.
- Marcuse, H. (1998). Some Social Implications of Modern Technology. In D. Kellner (Ed.), *Technology, War and Fascism: Collected Papers*, vol. 1. New York: Routledge.
- McDowell, J. (1996). *Mind and World*. Cambridge: Harvard University Press.
- Nietzsche, F. (1920-29). *Gesammelte Werke* 16. Munich: Musarion Verlag.
- Pippin, R. (1999). *Modernism as a Philosophical Problem*, 2nd edition. New York: Blackwell.
- Schaff, K. (2002). Agency and Institutional Rationality: Foucault's critique of normativity. *Philosophy and Social Criticism* (forthcoming).
- Taylor, C. (1984). Foucault on Freedom and Truth. *Political Theory* 12: 152-183.
- Thiele, L.P. (1990). The Agony of Politics: The Nietzschean Roots of Foucault's Thought. *American Political Science Review* 84 (3): 907-925.
- Walzer, M. (1983). The Politics of Michel Foucault. *Dissent* 30: 481-490.
- Wolin, S. (1988). On the Theory and Practice of Power. In J. Arac (Ed.), *After Foucault*. New Brunswick: Rutgers University Press.



How does the Body get into the Mind?

WOLFF-MICHAEL ROTH & DANIEL V. LAWLESS

Applied Cognitive Science, University of Victoria, PO Box 3100 STN CSC, Victoria, BC, Canada V8W 3N4 (E-mail: mroth@uvic.ca)

Abstract. In this article, we propose that gestures play an important role in the connection between sensorimotor experience and language. Gestures may be the link between bodily experience and verbal expression that advocates of "embodied cognition" have postulated. In a developmental sequence of communicative action, gestures, which are initially similar to action sequences, substantially shorten and represent actions in metonymic form. In another process, action sequences are based on kinesthetic schemata that themselves find their metaphoric expression in language. Again, gestures enact kinesthetic schemata that are correlated with verbal expressions. Examples from a large database are used to illustrate the various processes by means of which language arises when students conduct school science investigations.

Our consciousness and rationality are tied to our bodily orientations and interactions in and with our environment. Our embodiment is essential to who we are, to what meaning is, and to our ability to draw rational inferences and to be creative. (Johnson, 1987, p. xxxviii)

The way humans know and learn is central to the pursuits in many disciplines including psychology, neurobiology, sociology, and cognitive science. While researchers in each of these domains focus on different dimensions, many remain either silent about or disregard altogether the role of the body in cognition. Others hold that bodily experience is central to the way we know, think, and make sense of the world (Johnson, 1987; Moore, 1988); in particular, there is some evidence that object manipulations lead to symbolizing gestures (Streeck, 1996a). Consequently, cognitive structure is a function of physical human experience in a thoroughly practical world. Working from (although not limiting ourselves to) this theoretical approach, we attempt to address how the practical world impinges on discourse, particularly discourses about "abstract" objects and theories.

It has been argued that psychology "has assumed all too eagerly *the split between the mind and the world*" (Ibáñez, 1994, p. 375, emphasis in the original). And, despite efforts to mend the great schism of body and mind (e.g., Johnson 1987; Lakoff & Johnson, 1999; Varela et al., 1993), there has been little work to show how the human body figures in school learning. How does