

## Social Interaction, Goals, and Cognition

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The articles by Tageson, Rychlak, Slife, Williams, and Lamiell and Durbeck in this special issue on teleological approaches to cognitive psychology make an important contribution. They raise questions about current efforts to study human cognition that cannot be ignored. I agree with the contributors' challenge of contemporary cognitive psychology, but I support their criticisms on the basis of a very different perspective from the one that guides their critique. In what follows, I will present this alternative point of view and discuss its implications. These implications include a critical view of contemporary cognitive psychology that shares much in common with the one offered by the contributors, but the perspective I will present also leads to a challenge of key aspects of the teleological approach. It involves a different way of conceptualizing purpose and agency as well as a picture of the nature of knowing that departs from how cognition is conceptualized in both cognitive psychology and the teleological approach. The differences between my position and the teleological approach reflect a basic shift of focus. Whereas the teleological approach directs attention to a cognitive *dialectic within the subject*, the focus of the alternative perspective I will map out is on the *dialogue between the person and the social world*.

### The Accomplishments of the Teleological Approach

The articles in this special issue do an excellent job of pointing out central limitations in contemporary cognitive psychology. In addition, they present an interesting model of cognition to replace the prevailing accounts. Rychlak's very

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I would like to thank Joseph Rychlak for the discussions we have had about some of the ideas presented in this article and about many other topics in philosophical psychology. I am very grateful for the encouragement he has offered me in my work even when my thinking departs from his own approach. I would also like to thank Hubert Dreyfus for teaching me about the philosophical perspective that is the basis for this article. Requests for reprints should be sent to Michael A. Westerman, Ph.D., Department of Psychology, New York University, 6 Washington Place, 4th Floor, New York, New York 10003.

important discussion of dialectical reasoning serves as the foundation for these accomplishments. According to Rychlak, the mind is active in a way that often has not been recognized. He points out that the British empiricists (e.g., Locke, Hume) argued that a stimulus in the environment leads to knowledge through a passive process in which what becomes known is limited to what is given by experience. Rychlak argues that if we go back to classical Greek philosophy we can find the basis for a very different approach that gives proper credit to the way in which mind contributes to the process. According to this model, the mind works dialectically. The stimulus that leads to thinking about one idea—call it *A*—also leads to thinking about its opposite—*non-A*. Cognition is not limited to what is given by experience because the direction of thought is not fixed by the stimulus. Furthermore, the person is an active agent who can freely choose to act in the direction of *A* or *non-A*.

Of course, the objective of Rychlak's article is to show that his perspective has important implications for current work in cognitive psychology. Basically, he claims that cognitive psychology fails to appreciate the way in which the mind contributes actively to knowing. He argues that cognitive psychology continues to reflect the passive model of mind of the British associationists. While I disagree with simply mapping contemporary cognitive psychology onto British empiricism (see below), I believe that Rychlak's critical comments are on the right track. I agree with his basic conclusion that cognitive psychology does not reflect a true appreciation of the active role played by mind. Moreover, I believe that many of the specific critical observations made by Rychlak and the other contributors are on the mark. For example, I think Rychlak is right to fault contemporary cognitive psychologists for their overly extensive reliance on a simple frequency principle. Along a similar vein, Lamiell and Durbeck present a convincing critique of what they call the normative model in impression formation research. I believe that Slife's article on metacognition (also see Williams' paper) points out crucial problems regarding executive programs, problems that seem to require us to choose between "solutions" involving either infinite regresses or homunculus explanations.

It is very much to the credit of the teleological approach that the model of dialectical cognition provides a basis for these critical observations. Even more credit is due the approach because it leads not only to this critique but to alternative positive accounts of processes of interest, accounts that can be—and have been—the subject of empirical investigation. Examples here include Rychlak's research on affective preferences (which Rychlak discusses briefly in his contribution to this special issue), Slife's studies of metacognition (again, briefly described by Slife in his article), and Lamiell and Durbeck's research on impression formation. The findings from these lines of research constitute an empirical challenge to specific efforts in "mainstream" contemporary cognitive psychology and they provide some support for the model of dialectical cognition.

### Fundamental Commitments of the Teleological Approach

It is important to add a brief discussion of the fundamental commitments of the teleological approach to the preceding summary of its accomplishments. I am using the term "fundamental commitments" to refer to such basic features of the perspective as its view of meaning and the stance it takes on the relationship of the subject to the world. It is necessary to turn to such matters because the challenge I will raise to the teleological approach operates at this fundamental level.

I will start by summarizing basic commitments I agree with. These commitments are negative or critical claims the teleological approach maintains in opposition to empiricism. To begin with, there is the belief that the significance of a stimulus goes beyond the stimulus in itself. Although I do not subscribe to the model of dialectical cognition, which is the specific basis for this view in the teleological approach, I do accept the conclusion. And it is a very important conclusion indeed. It carries with it the ideas that meaning goes beyond the mere contents of experience and that subjectivity plays an active role in knowing. Closely related to these beliefs is a model of agency according to which human behavior cannot be explained in terms of laws governing the realm of necessity.

These are important ideas, and in my opinion they are right on the mark. In the teleological approach, however, they are coupled with other commitments I believe to be misguided. The claim that subjectivity goes beyond mere experience is linked to a picture of the subject as separate from the world. The subject views the world from a position above the flow of actual events. From this vantage point, the subject can take a stance in opposition to experience. For example, Rychlak (this issue) defines agency as "behavior carried out by the actor in addition to, in contradiction of, or without regard for biological and/or environmental promptings." Similarly, Slife (this issue) asserts that "cognition can be an influence apart from environmental influences." The claim that the subject is separate from the world is *not equivalent* to the view noted in the preceding paragraph that human behavior cannot be explained in terms of laws of necessity. The idea of a separate subject above the flow of events represents one particular way of understanding the earlier claim. The situation is similar when it comes to the notion that the subject actively contributes to knowing. In the teleological approach, the view that the mind does more than passively process information is coupled with the idea that mind brings something to the knowing relationship that is entirely on its side of the mind-world dichotomy. For example, Tageson (this issue) refers to an activity that issues "from mind itself" and Slife (this issue) speaks of "uniquely mental contributions." Here again, these claims are *not identical* to the assertion that the subject plays an active role. Again, they represent one possible picture of the subject's activity.

Although at this juncture it may seem that these observations amount to hairsplitting, in what follows I will make it clear that this is not so. I will present a perspective that incorporates the “good” fundamental commitments and steers clear of the misguided commitments. It will become apparent that this alternative perspective is radically different from the teleological approach.

### A Philosophical Perspective Based on Involved Subjectivity

According to the teleological approach, it is essential to take a person's goals into consideration if we are to understand human behavior and cognition. But where do these goals come from? How do they enter into the picture? Whose “side” are they on — the subject's or the world's? I believe that the environment plays a far greater role in the answers to these questions than is acknowledged by the teleological approach. Goals are not separate from the world. Agents do not choose what to do from a removed position above the realm of actual events.

But there is a tremendous risk — indeed, almost the certainty — of misunderstanding here. The assertions I have just made probably seem to indicate that I have gone over to the side of “necessity.” In order to make my position clear, I will have to offer a discussion of the philosophical perspective that guides my approach to these issues. This perspective is based on the work of Merleau-Ponty (1962), Wittgenstein (1958), and Heidegger (1962). In addition, my position reflects some of the basic ideas of American pragmatism. [The interested reader may find it useful to confer Dreyfus (1979) for a more lengthy exposition of the perspective.]

The philosophers who have most influenced my thinking have identified the notion of the uninvolved subject as central to the Western philosophical tradition. Empiricism and its primary competitor in the tradition, rationalism, take as their fundamental question “How does the subject come to know an object?” Both positions think about this issue as if the subject approaches the object as a removed, isolated knower who is uninvolved with the object in any way at the outset. Empiricism accepts this formulation of the epistemological problematic and answers it on the side of the object. The distance between subject and object is spanned by a process in which the subject passively receives the contents of experience. Rationalists accept the same formulation of the issue, but they take the route of answering it in favor of Mind. For them, subjectivity plays an important role. The subject brings to bear concepts, categories, structures, or rules to get at the meaning that lies behind what is given by experience itself.

The teleological approach rejects the position offered by the empiricists and, therefore, it rejects *one* perspective based on a view of the subject as separate from the world. But the approach strongly reflects the influence of rationalism. This influence can be seen quite clearly in the contributors' commitment to the idea that the subject occupies a privileged position outside and above the flow of events. The point here is that the teleological approach shares with the main

currents of our philosophical tradition the notion of uninvolved subjectivity. This means that it actually holds much in *common* with the empiricist position it rejects. Moreover, it also means that the teleological approach actually is *similar* to cognitive psychology in critically important ways—because cognitive psychology, too, is based on the idea of uninvolved subjectivity.

The philosophical perspective that guides my thinking rejects the picture of uninvolved subjectivity. According to this alternative viewpoint, the subject always comes to know an object against the background of the subject's prior involvement in the social world of practical activities. Involvement in the world of shared, meaningful practices comes first. The world of shared practices always provides the basis for knowledge. Given this starting point, with its radical departure from the traditional formulation of the basic epistemological issue, it also holds true that the world of shared practical activity is the bottom line with respect to fundamental questions about agency and cognition.

In certain respects, Williams' contribution to this special issue refers to important ideas from the perspective I have just briefly described. The similarities are reflected, for example, in his focus on "meaningful action" throughout his article, and in Williams' interest in the "shared contextual framework" within which meaningful action takes place. Nevertheless, I believe that insofar as Williams holds a basic perspective similar to mine, he has failed to draw from it important conclusions. In particular, he does not recognize that a perspective based on involved subjectivity leads to a fundamental challenge to core ideas in the teleological approach.

### Goals are in the World

We can now return to the question about where goals come from. The teleological approach suggests that they come into the picture from the subject's side of the mind-world dichotomy, and that they reflect the fact that agents are free to make choices from a vantage point outside the flow of events. As I indicated above, my view contrasts sharply with this position. I believe that much more credit must be given to the role played by the world.

I have stated that the world of shared social practices represents bedrock foundation in the basic philosophical perspective that guides my thinking. The reason I believe that the world plays a key role when it comes to questions about goals is that goals or purposes are part and parcel of these founding practices. Goals and practical activity are intimately and inextricably bound up with one another. The question of what counts as a goal for us cannot be answered without reference to the world, and it is also true that the *directions* we choose to pursue reflect the fact that we are influenced by the world.

Again, from traditional points of view based on the notion of uninvolved subjectivity the risk of misunderstanding here amounts to virtual certainty. My insistence that the world has been shortchanged by proponents of the teleological approach is likely to suggest that I am really arguing that goals can be explained

away in terms of brute facts and necessity. But this is not at all what I mean when I assert that goals are not separate from the world.

According to the perspective based on involved subjectivity, the world or environment "itself" is never a dead world of objects and events governed by the laws of necessity. The world is made up of shared practices, not brute matters of fact. Furthermore, these shared practices are defined by goals. These claims hold true, for example, whether the events in question are the supposedly "brute" behaviors observed at a Parents-Teachers Association meeting at a local grammar school or the issue of what "chair" means. While it might seem obvious, but also of secondary importance, that the behaviors observed during the PTA meeting can only be understood with respect to the goals or purposes of the participants (e.g., everyone's concerns about good education, teachers' hopes of getting a good salary package, parents' worries about the taxes associated with a big school budget), it is probably not at all obvious that goals play a fundamental role in any adequate account of what a chair is. Nevertheless, the claim that the world of shared practices is always the basis for knowledge leads directly to this conclusion. In order to understand what "chair" refers to, one must recognize the role chairs play in the practices of the social world (cf. Dreyfus, 1979, pp. 37-38; Westerman, 1986). In particular, a chair is something to sit on — perhaps in order to get some rest, or to hold oneself in a good position for reading a book or eating a meal, or to avoid getting one's clothes dirty sitting on the floor, etc.

According to the perspective based on involved subjectivity, these observations about chairs reflect a *fundamental* idea that applies to chairs, PTA meetings, and everything else. The environment is not made up of dead contents and meaningless events. Instead, *from the outset* everything in the world takes its place in the meaningful context of shared practices. Moreover, and as the chair example makes clear, these practices are about goals. To say that the world of practices is the bottom line is to say that goals or purposes are bedrock.

The point is that when I assert that goals come from the world, this does not amount to depriving them of meaning. Rather, it is entirely the other way around. The fact that goals are located in the world gives meaning to objects and events. There is no realm of necessity "out there," separate from and antecedent to the world of shared purposes. This way of looking at things turns topsy turvy all the questions addressed by the teleological approach. In particular, it no longer makes sense to ask whether the world impels us to act in a way that leaves no room for goals. The premise of this question is that the world "in itself" is separate from human goals. What this question fails to recognize is that goals are in the picture as soon as the world is there.

### Freedom is Conditional

At this point, there is a risk of misunderstanding in the opposite direction. It might seem that my arguments against reducing goals to the laws of necessity

amount to supporting a view of the person as an agent separate from the realm of concrete facts and free to make choices from a removed vantage point because, after all, I have argued that there is more to the world than brute facts. In fact, such a reading of my position would be fully off the mark. I have not come full circle from an "apparent" position on the side of the world to a final stand in favor of the subject. The notion of involved subjectivity leads to a very different view of agency from the position offered by the teleological approach. Indeed, there are costs associated with adopting the alternative position I have suggested. In some very important respects, it amounts to a much reduced view of the person as an agent.

According to the position I have begun to map out, people are agents. There is freedom. This is the case because our actions can only be understood in the context of the meaningful world of shared practices and because these practices are about human goals from the word "go." Clearly, this position does not represent going over to the side of necessity. But it also does not represent going over to the side of the subject. The point is that the world of shared practices is always there before the individual agent enters the picture. The world of practices provides a background with respect to which we act. As such, it gives meaning to our actions. But this background always far outstrips the individual agent. The agent never fully possesses the shared world. Hence, the particular goals I adopt are never mine alone. They always refer beyond me to the world of shared purposes. Goals are not on the side of the subject.

It is important to make explicit that the perspective of involved subjectivity does not "just" lead to the conclusion that what counts as a goal for the individual agent always refers beyond the agent to the world of meaningful, shared practices, as if this issue could be separated from questions about the *direction* of goal-directed activity we choose to pursue. The world does not impel us to act in a given direction via laws of necessity. In order for that to be the case, there would have to be two separate terms—a mechanical environment of objects and events on the one hand and a subject on the other hand. The perspective based on involved subjectivity rejects this formulation of the issue. But the world does "motivate" us. Here, I have used the term suggested by Merleau-Ponty (1962, p. 435) to refer to the idea that the world influences us, but not in the sense that it "causes" us to behave in a particular way (which would require that the situation conform to the formulation involving two separate sets of terms).

"Motivation" means much more than the idea, which would be congenial to the proponents of the teleological approach, that agents "take into consideration" events that transpire in the world. Again, the individual agent is involved in the world, embedded in it. Agents cannot stand off to a side and from that vantage point choose what to do about the events "out there." We always see things from the perspective of our involvement in the world, and this involvement is not dispassionate. It entails commitments that we always have made before we can reflect on them. (Of course, we can reflect on particular commitments before

adopting them, but even in such cases our reflections go on against a rich and powerful background of other commitments.) While it is true that the influence the world has on us cannot be described in causal terms because agents are not separate from the world in which they are involved, for the very same reason it is also true that we do not possess radical freedom—the capacity to decide fully on our own terms what to do about things and to have equally available the possibility of acting in one direction or its opposite. Our freedom is conditional. The notion of involved subjectivity leads to a view of agency based on interdependence, not autonomy (cf. Westerman, 1986, p. 67).

### The Nature of Cognition

The perspective based on involved subjectivity has important implications when it comes to questions about cognition, just as it does for issues about goals and agency. The perspective leads to supporting criticisms leveled by proponents of the teleological approach against contemporary cognitive psychology but, here again, it also points away from the teleological approach itself.

As noted above, the core of the teleological approach is Rychlak's model of dialectical reasoning. By asserting that a stimulus leads not only to thinking about an idea, *A*, but also to thinking about its opposite, *non-A*, Rychlak provides a model that goes beyond traditional empiricist accounts. Without doubt, this model represents one way of conceptualizing cognition as an active process. I believe that these features of the position (rejecting empiricism in favor of a conception of mind as active) are good ones. At the same time, I believe that there are crucial limitations to the model.

The teleological approach does not consider questions that must be addressed about the *nature* of knowing. The crucial issues, in my opinion, do not concern the direction of thought or the possibility of choice between dialectic opposites. If one accepts that thinking about *A* is necessarily accompanied by thinking about *non-A*, we still must ask about the *nature* of these cognitions. What is it like to know some idea, *A*, or a dialectical pair of ideas, *A* and *non-A*? I believe that human cognition is characterized by a complexity that the teleological approach fails to recognize. Knowing *A*, or for that matter knowing the pair *A* and *non-A*, is a different matter from what is described in the teleological approach. It is a matter of far greater complexity than that approach reflects.

#### *Understanding Restaurants*

I can begin to clarify these points by turning to a consideration of some work by Schank and his colleagues on "scripts," a well-known approach to research in cognitive psychology. Schank and Abelson (1977) developed a script that supposedly enables a computer to understand stories about going to a restaurant. In his contribution to this special journal issue, Rychlak criticizes their approach.



He rejects the claim that a child could learn about going to restaurants through a process based on mere frequency of exposure. Specifically, he argues that frequent exposure, which Schank and Abelson (1977, p. 222) described as "being dragged through the experience enough times," might well lead a child to intentionally subvert the sequence rather than to accept it as the way to behave in restaurants.

I agree with this point as far as it goes. Indeed, for many children certain types of "frequent exposure" to restaurants no doubt lead to just the sort of outcomes Rychlak suggests. Nevertheless, I believe that in a very important sense Rychlak's critique actually reflects acceptance of Schank and Abelson's account. His comments do not go far enough in challenging the basic claim that the restaurant script incorporates what we need to know to understand going to restaurants. His point is that a person who knows about going to restaurants *in the terms suggested by Schank and Abelson* might well violate the "correct" script. I want to argue that even when a person learns about going to restaurants in a very "proper" way, the nature of that knowledge is entirely different from what is described in script theory. Similarly, in order to give an adequate account of what happens when a person understands about going to restaurants and departs from standard behavior, it is not enough to imagine that knowing about restaurants can be described along the lines of script theory plus the possibility of acting in directions that break the standard script. While it certainly represents a new point of view in some respects to replace a model based on knowing *A* with an account that includes *A* and *non-A*, the departure remains a limited one so long as the nature of knowing *A* itself remains unquestioned.

What is the nature of this knowledge? At this juncture, it will prove useful to consider another critique that has been advanced regarding Schank and Abelson's (1977) restaurant script. Dreyfus (1979) offered a consideration of this work as part of his brilliant analysis of the limitations of cognitive psychology and artificial intelligence, an analysis based on the notion of involved subjectivity. Dreyfus shares with Rychlak the view that something is very wrong with the approach taken by Schank and Abelson, but Dreyfus' critical evaluation is based on different reasons. Dreyfus, like Rychlak in a sense, was especially interested in breaches of the standard restaurant script. He was interested in such phenomena, however, not because they show us that people can choose to act in opposition to the correct way to behave in restaurants, but because they help us see the incredible complexity that goes into knowing what counts as the correct way. For example, Dreyfus (1979, p. 42) asked what a program based on Schank and Abelson's script would make of the events depicted in the scene from the film *Annie Hall* when Annie ordered a pastrami sandwich on white bread with mayonnaise in a New York delicatessen. At another point, Dreyfus (1979, p. 43) considered how the program would respond to a question like "When the waitress came to the table was she wearing any clothes?" In fact, the program would not have a clue about how to respond to such input.

Here, one might come to the defense of the script approach by arguing that the restaurant script could always be amended to take these potential inputs into account. Although it is true that the script could be changed in ways that would enable it to handle these *particular* examples, this argument in defense of the script approach fails to recognize the fundamental import of Dreyfus' observations. The point is that genuine understanding of going to a restaurant includes as a matter of course knowledge of such things as cultural/ethnic preferences and conventions about foods, understanding that appropriate behavior in public places like restaurants includes wearing clothes, and a *fantastic wealth of other relevant practical know-how*. The problem with the script approach is that it fails to acknowledge that real understanding about restaurant things/events "in particular" always goes on against the background of our familiarity with the world of shared practices at large (i.e., buying things, eating food, doing things in public settings, and so on).

If this is true, then the script approach is fundamentally off track. In addition, it would follow that Rychlak's remarks about the possibility of subverting the restaurant sequence also miss the crucial point. Unless we change our basic view of what is involved in understanding going to restaurants so that it reflects appreciation of the role played by background familiarity with shared practices, then our models will not be complex enough to explain what really is involved in knowing what would count as a violation. For example, even if one accepts Rychlak's model about a dialectical reasoning process that includes thinking about both *A* and *non-A*, knowing *A as described by the restaurant script* could never lead to Groucho Marx's wonderfully subversive restaurant maneuver (in the movie *A Night at the Opera*) in which he took the check from the waiter, looked at the total, handed the check to Margaret Rutherford, with whom he was dining, and said to her "Outrageous—if I were you I wouldn't pay it." This particular subversion of "the script" goes beyond the script not simply by negating it but because it requires familiarity with background practices about dating, gentlemanly behavior, etc. that the script itself does not include.

### *Knowing How is the Basis for Knowing That*

Although Dreyfus' observations about background knowledge may seem useful because they point to limitations in the particular restaurant script Schank and Abelson (1977) developed, it may not be clear that they provide the basis for a fundamental rejection of the script approach and of basic tenets of cognitive psychology in general. It might still seem that the argument noted above about augmenting Schank and Abelson's script so that it can handle Dreyfus' examples is a good one. And indeed, as Wittgenstein might have put it, one might be "tempted" to believe that the project of developing a model of how we understand going to restaurants *must* involve a process in which we start with a first pass account like Schank and Abelson's model and then add

new features to that model one after the other until it finally does a good job. In order to make clear the true thrust of the critique of the script approach offered above and the alternative account it leads to regarding the nature of cognition, it is necessary to link the remarks just presented with my earlier discussion of involved subjectivity.

Again, the basic perspective that guides my thinking about agency and cognition contrasts with the picture, central to traditional philosophical positions, of a removed, isolated subject who confronts the object from a "distance." Instead, the subject always approaches any particular new object against the background of the subject's involvement in the world of shared practices. This view does not lead to the conclusion that there is no such thing as understanding or cognition because only "behavior" really exists. Moreover, the view does not lead to rejecting the idea that we possess knowledge like that (to a point) assumed in most theoretical accounts of cognition, a kind of knowing Merleau-Ponty (1962) referred to as "thematized understanding." According to the perspective based on involved subjectivity, however, all thematized understanding is grounded in prior familiarity with practical activities, which Merleau-Ponty called "prereflective understanding." This is the primary kind of cognition. It by no means boils down to mere behavior but, at the same time, it can never be separated from practical activity in the world.

This is an extremely difficult idea to grasp. A useful handhold here is to consider the contrast often drawn by philosophers between "knowing how" and "knowing that." In brief, the former term refers to a practical know-how like that displayed, for example, by a natural musician who plays the clarinet wonderfully well without the benefit of formal instruction or any knowledge of music theory. "Knowing that," on the other hand, refers to understanding based on propositional knowledge. For example, in contrast to the natural musician, there is the trained musicologist who "knows that" such and such principles explain why certain sequences of notes sound melodious.

It may seem obvious that both types of knowledge exist. Nevertheless, in our philosophical tradition there is an old, powerful, and central belief that at bottom "knowing how" can always be explained in terms of "knowing that." If there is order or patterned regularity in a person's behavior, then it must be possible to develop a fully explicit theoretical account of the "understanding" that provides the basis for this organized behavior. This is not to say that the person in question will be able to provide such a fully explicit account (for example, a model of automatic stimulus-response associations is entirely compatible with the prejudice in favor of "knowing that"). The claim is "no more" than that some "knowing that" type of model always exists from an observer's perspective for explaining orderly behavior. This is actually a claim of enormous proportions.

The perspective based on involved subjectivity stands this claim on its head. Practical know-how is viewed as the primary term. "Knowing that," or thematized

understanding, is based on it. Although this idea represents a radical departure from key elements of our intellectual tradition, it is not entirely unique to the work of philosophers of central interest here, Merleau-Ponty, Wittgenstein, and Heidegger. Certainly, the pragmatists focused on practical know-how. More recently, one can find a similar idea in Polanyi's (1962) discussion of tacit knowledge. For many readers, however, it may be especially useful— although not a simple matter— to point out that Piaget (e.g., 1983, p. 704) asserted that all cognition, even formal operational thinking, should be conceptualized as ways of acting in the world. The reason it is tricky to refer to Piaget here is that although recognition of the central role played by “knowing how” informs Piaget's work in many respects, he was not consistent on this score. A prejudice in favor of “knowing that” also is reflected in crucial ways in his approach [cf. Bullock's (1987, p. 214) excellent Wittgenstein-inspired discussion of intellectual development on this point and also Toulmin (1972, pp. 423-444)].

#### *Pointing Away From Traditional Views and Toward an Alternative Approach*

To be sure, it is not enough simply to make reference to the “knowing how”/“knowing that” distinction. The main questions remain. What does it mean to assert that prereflective understanding, or “knowing that,” is primary? What view of the nature of cognition follows from this idea? There is also a need for further clarification about what I have referred to as a prejudice in favor of “knowing that.” What kinds of accounts of cognition reflect this prejudice? These are difficult questions. Indeed, I believe the inconsistencies in Piaget's work reflect how very difficult it is to understand just what is at stake in adopting the view that “knowing how” is basic (more on this later).

In order to make headway on these critical issues, it will be useful to return to an example briefly discussed above and consider what is involved in teaching someone the concept “chair” (cf. Dreyfus, 1979, pp. 37-38; Westerman, 1986). As I suggested elsewhere (Westerman, 1986), the teacher might well point to a number of examples as follows:

“There's one” (pointing to a young man at a table having dinner). “There's another” (pointing to a woman sitting in an armchair and reading a book). “That's not a chair” (pointing to a sculpture in a museum that happens to have four ‘legs,’ a ‘seat,’ and a ‘back,’ which looks more like a chair than many real chairs). “And that (a throne) is an unusual case of a chair.” (p. 54).

I offer this hypothetical scenario of how one might go about teaching the concept “chair” because I believe it suggests important points about our basic, traditional approaches to thinking about concept learning and cognition in general. To begin with, it suggests that the empiricist's view is off base. A pupil could not learn what “chair” means from this lesson, if the learning that took place were a passive process based directly on the mere contents presented. The negative example of the piece of sculpture indicates that the meaning of the

concept cannot be defined in terms of physical features. More generally, in many ways the teaching strategy employed implicitly reflects the view that what is to be learned is more than the instances cited.

But how are we to understand what it means to say that the concept is "more than" the specific instances? One might well turn to the tradition of rationalism at this point and suggest that what the teaching strategy really accomplishes is to teach the pupil an abstract meaning that lies "behind" the concrete examples pointed out. But is this what the teaching scenario really suggests? The museum sculpture example in a negative way and also the other examples in a positive way suggest that the concept goes beyond the instances in themselves because purposes or functions play a central role in what we mean by the concept "chair." The teaching strategy reflected this idea by building on the pupil's familiarity with such activities as eating dinner, reading books, displaying artwork in a museum, and holding political ceremonies. As Dreyfus (1979, p. 38) pointed out, while it might seem like a straightforward matter to add to one's account a "functional descriptor" such as "something one can sit on" to get at the meaning that lies behind these varied activities, this is not the case. When this "functional descriptor" is viewed in this way (as a meaning that can be abstracted from the specific instances), it quickly breaks down. As Dreyfus (1979, p. 38) observed, "it cannot even distinguish conventional chairs from saddles, thrones, and toilets."

The functions involved in understanding the term "chair" are incredibly complex. The concept goes beyond the instances cited not because it involves some abstract meaning that holds true across all cases of chairs, but because the examples point out from themselves to indicate the role chairs play in concrete activities in the world, that is, the purposeful practices involved in eating dinner, displaying artwork, etc. The examples of real, concrete situations are not just a convenience. They are an irreducible part of understanding the concept.

This last point (arguing against the rationalist's notion of abstract meanings) certainly merits further consideration. In this connection, it is interesting to turn to remarks offered by Winograd [a central contributor to artificial intelligence research who arrived at a critical view of contemporary cognitive psychology (including his own prior efforts) very much along the lines presented here] in a discussion of the meaning of "bachelor." Winograd (1980) argued against the idea that there is an abstract meaning for this term as follows:

In classical discussions of semantics, "bachelor" has been used as an example of a word with a clear paraphrase in more elementary terms—"unmarried adult human male." But if someone refers to a person as a "bachelor" in normal conversation, much more is meant. It is inaccurate if used in describing the Pope or a member of a monogamous homosexual couple, and might well be used in describing an independent career woman. The issue is not that the definition of bachelor is complex and involves more terms than usually accounted for. There is no coherent checklist of any length such that objects meeting all of its conditions will consistently be called "bachelors" and those failing one or more of them will not. The question "Is X a bachelor?" cannot be answered without asking "Why do you want to know?" (p. 217)

By insisting that we must always ask "Why do you want to know?" Winograd offered his support to the claim that the meaning of concepts ("bachelor" in this case) always refers to purposes involved in real, concrete situations. Understanding whether and how to use a term in these situations is an irreducible part of understanding what it means. There is no definition that stands apart from or behind these contexts and the purposes involved in them. Adams and Bullock (1986, pp. 159-160) expressed this idea by saying "learning a word . . . is a matter of learning a module of cultural practice." This is what Wittgenstein (1958) meant when he repeatedly pointed out that our "forms of life" are the basis for meaning.

It is hard to overstate the degree to which things are turned upside down by this way of thinking about cognition. It represents a radical departure from traditional approaches. Precisely for this reason, it is hard to grasp. Many readers may acknowledge that the preceding discussions about restaurants, chairs, and bachelors all demonstrate that in order to understand something (e.g., whether a given object is a chair) it is necessary to bring to bear an appreciation of the situation in which that object, action, or event plays a role. Nevertheless, one might still be tempted to argue that it should be possible to incorporate the relevant information about contexts in our accounts. Indeed, the idea that it must be possible to put together accounts that include this information is the *central assumption* of the philosophical tradition. For empiricists, this idea is reflected in the belief that we need not take contexts into account in any important sense at all, because models can be built up in terms of associations between contents that are what they are in themselves. For rationalists, the basic assumption leads to the belief that there are categories, rules, structures, etc. that enable us to recognize what context is relevant so that we can know what to make of any object in question. Given either formulation, we can now see what the notion of uninvolved subjectivity is all about. It is not just an image of how the knowing relationship should be conceptualized at its start (i.e., a removed, isolated subject approaching an entirely new object). It has powerful implications for our view of what cognition is like. From the standpoint of uninvolved subjectivity, the nature of cognition is assumed to be what it would be like if we learned about the world from the outside, looking at it from a vantage point from which we could not only see particular objects, events, and so on but also the contexts in which those things appear. The prejudice in favor of "knowing that" is simply another way of referring to the assumption that this is what cognition must be like.

The notion of involved subjectivity does no less than challenge this assumption. The person always knows things from within some concrete context. We never get outside of these situations. "Knowing how," or prereflective understanding, is basic because it is the *type* of understanding one has from within situations. It is a kind of familiarity that enables us to engage in the practical activities that make up our lives but, as I said above regarding goals, we never fully possess this

understanding (as would be true if it involved complete accounts of the contexts themselves). This means that our understanding of things is of such a nature that it cannot be completely explicated. It is indeterminate. Cognition is *not* on the side of the subject. It always refers beyond any thematized accounts we come up with to the world of practical activity. As Wittgenstein (1958, p. 108) said, "An intention is embedded in its situation, in human customs, and institutions."

So far, my comments have served mostly to say what the nature of cognition is not. I have suggested that the way we know things cannot be adequately accounted for by models that assume that implicitly we have a complete, explicit understanding of objects, events, etc. of interest plus the situations in which they play a role. But what is cognition like then? In a positive vein, what does it mean to say that our understanding is primarily a matter of practical know-how? Two points can be made to respond to these questions. The first is that the perspective based on involved subjectivity leads to the claim that *meanings play an irreducible role in an adequate model of cognition*. In a very real sense, meanings like "ungentlemanly thing to do" (going back to Groucho Marx's restaurant behavior) are the bottom line. They cannot be explained away by making explicit what does and does not count as "ungentlemanly behavior" or whatever the meaning in question might be. Again, this is not because these meanings are abstractions that lie behind the situations in question (in which case we would be able to explain them away), but because meanings are irreducibly embedded in real situations, that is, they are part of the shared world of practical activities.

This leads to the second point. Directly related to the notion that meanings play an irreducible role is the idea that human cognition is *context-dependent*. Understanding is an ability to know what to make of things from within a context. "Context-dependent" does *not* mean that we have an abstract understanding of certain things (e.g., what a chair is) and only tacit knowledge of the situations in which that meaning applies (although it is useful for heuristic purposes to consider this idea, such a model is actually nonsensical because it is not possible to treat the meaning of a concept as something separate from the situations in which it applies). What "context-dependent" does mean is that specific contexts and the concrete purposeful activities involved in these situations give behaviors, events, etc. their meaning. It is with respect to a situation that we recognize what it would mean for something to be a chair, ungentlemanly behavior, and so forth in the given case. As Dreyfus (1979) and Winograd (1980) pointed out, whereas traditional approaches assume that cognition must involve some way of recognizing what is salient in a particular case so that we can know what kind of context the case presents, the notion of involved subjectivity leads to the view that the context defines for us what is salient. Although knowing about restaurant behavior, or chairs, or bachelors are all *impossibly* complicated matters if we assume this knowledge is based on the kind of understanding one would have from the outside looking in, in fact, we understand such examples

as Annie's sandwich choice and the museum sculpture that only looks like a chair without any trouble at all. In these cases, given the way cognition really works, the situation immediately leads us to see what to make of things.

### Implications for Cognitive Psychology and the Teleological Approach

The preceding remarks about the nature of cognition provide the basis for a different and considerably more far-reaching critique of cognitive psychology than the one suggested by the proponents of the teleological approach. Moreover, this critique applies to the teleological approach as well. Indeed, as a first step toward laying out the implications of what has been said up to this point for cognitive psychology, it will be useful to consider Lamiell and Durbeck's contribution to this special journal issue in which they report on their impression formation research. The research departs from work in mainstream cognitive psychology in certain respects, but it shares certain basic limitations with that work.

In Lamiell and Durbeck's study, subjects first rated 16 activities (e.g., studying, dating, working at a part-time job, etc.) for their relevance to each of three dimensions (warm or impassioned vs. cool or dispassionate, plus two other dimensions). Subjects were then given protocols for a number of hypothetical target persons that indicated each target's scores on the 16 activities. Finally, the subjects were asked to rate each target person on the three dimensions. In certain respects, the findings of the study are very interesting. I believe that the study does an excellent job of demonstrating that in forming impressions people do not reason only from instances *actually* seen according to what Lamiell and Durbeck refer to as the "normative model." The results seem to indicate that people treat each piece of information about a target (i.e., each score on one of the 16 activity items) by assessing what this score says about the target's standing on a continuum ranging from the lowest to highest *possible* scores on each dimension of interest. Although the study does show that the meaning of concepts (e.g., impassioned vs. dispassionate) is more than instances actually observed, I am less confident about the positive implications of the research.

The study was based on the assumption that we can move from activities (e.g., studying) to concepts (e.g., impassioned vs. dispassionate) in the abstract. There are two points here. The first point is that overall the study provided no context for making judgments about the targets. It is well to recall Winograd's (1980, p. 217) comment that in answering questions about whether a person is a bachelor we must always ask "Why do you want to know?" Lamiell and Durbeck's experiment provides no answer for this question, or alternatively, it can be said that by default the study constitutes an artificial context in which subjects made judgments simply because they were asked to do so as part of participating in a research project. A recent study of impression formation in children by Feldman



and Ruble (1987) makes it clear that the purposes for forming an impression (e.g., in order to make a decision about whether to play with another child at a later time) make a big difference in the impressions formed.

A second point about the abstract nature of Lamiell and Durbeck's approach is perhaps even more important. I would argue that the significance of where a target stands on a given activity depends on the particular situation in which that "fact" plays a role. The real import of where a target stands on an activity like "studying or reading intellectual material" for our view of the person in question will depend on why, how, and when the target person studies. In this investigation, scores on this activity and the other 15 activities were treated as if their significance is *context-free*.

It is true that the authors were able to account for a considerable amount of variance in their subjects' judgments with their "interactive model." They certainly were able to account for more variance with predictions based on this model than with predictions based on the normative model. Nevertheless, it must be recognized that *what* the interactive model explained were judgments subjects arrived at *in this experimental situation*. Given my comments about how the study failed to provide a context for making those judgments (beyond the context of participating in a research project), it remains a crucial open question whether the model would work in most or any real life contexts. I expect that the model would break down when tested in ways designed to investigate this concern. If we put aside this first issue about the context-free nature of the overall experimental procedure for a moment, my suggestion that scores on the 16 activities should not be treated as if they were context-free leads to another idea that departs from the approach taken by Lamiell and Durbeck. Even in the artificial context of the procedure employed in this study, it would probably be possible to account for much more variance in subjects' judgments in terms of a model based on the idea that the significance of a given item (e.g., a score on the "studying" scale) depends on the overall story told by the full set of activity scores for a given subject. To some extent, a complete protocol could be viewed as providing the context within which each specific score appears. If Lamiell and Durbeck had approached their data in this way, they would have gone some distance toward incorporating recognition of the fundamental role played by context. But they did not do this. Instead, they treated each activity score as if it were a context-free element.

While Lamiell and Durbeck's study provides convincing evidence for rejecting the normative model according to which impression formation is based on the frequency of instances observed, I believe that my comments point to important respects in which their approach is itself on the wrong track. Lamiell and Durbeck's study reflects the assumption that the way in which concepts are "more than" instances actually observed can be accounted for in terms of a model that maps instances (in their study, scores on each activity scale) onto concepts in the abstract. Because they accept this assumption, Lamiell and

Durbeck actually end up offering a kind of model that is quite congenial to contemporary approaches in cognitive psychology, even though their model does depart from one specific line of cognitive psychology research (i.e., impression formation studies based on the normative model).

This last point brings us to a crucial question. If it is true that contemporary cognitive psychology is limited in fundamental respects, exactly what are the basic problems? The contributors to this special journal issue suggest that what is wrong with cognitive psychology is that it reflects the strong influences of empiricist associationism. In fact, this claim only tells part of the story. In large measure, work in cognitive psychology is based on formal models of “structures” and “rules” that reflect the influence of rationalism, not empiricism. As one example among many, consider Chomsky’s approach to language. Chomsky’s focus on syntactical structures and transformational rules defined in formal terms (and also his nativism) clearly show that his work builds on the philosophical tradition of Kant, Descartes, and Plato as Chomsky (1972) has himself noted. The wide-ranging critique of cognitive psychology offered by the proponents of the teleological approach suggests that they recognize that the rationalism-based approaches, like those based on empiricism, are also off the mark, but *by focusing on the limitations of empiricism they fail to provide an adequate explanation of why this is so*. In his contribution to this special journal issue, Williams briefly notes that structuralist approaches play an important role in cognitive psychology. Nevertheless, he does not go on from this observation to make clear what are the fundamental failings of contemporary cognitive psychology.

The crucial point is that most efforts in cognitive psychology approach cognition in terms of the notion of uninvolved subjectivity. They reflect the assumption that we understand the world from the outside looking in – that it is possible to develop explicit accounts of cognition so that meaning and context do not appear in the bottom line of our models. As I discussed at some length above, *both* empiricism and rationalism provide views of cognition based on these assumptions. The influence of both of these positions can be found in current work in cognitive psychology. Many efforts – those guided by empiricism – reflect the assumptions of uninvolved subjectivity by simply denying that meaning and context play a significant role. Supposedly, cognition can be explained in terms of chains of associations between brute contents, i.e., contents that are what they are in themselves. Many other efforts, however, reflect the notion of uninvolved subjectivity in a notably different way because they build on the rationalist tradition. According to proponents of research along these lines, meaning and context cannot be dismissed, but it is possible to account for the role they play by means of formal models of meanings defined in abstract terms so that the models hold true across the range of possible contexts. Again, the point here is that these two sets of efforts share in common the view of the uninvolved subject.

The brief comments just offered about rationalist-influenced efforts require some elaboration. In fact, I can clarify the important points here by returning to a consideration of Lamiell and Durbeck's interactive model of impression formation. Their work is actually a good example of the rationalist approach. According to the interactive model, the meaning of the information provided in a given protocol goes beyond that information itself or any direct comparisons involving that information and similar facts from the protocols for other targets. This is the case because the real meaning of the information presented depends on how the given profile relates to a subject-generated conception of the most extreme possible positive and negative cases on the dimensions in question. But note: according to Lamiell and Durbeck, *it is possible* to develop an explicit model of this process. The model explains the meaning of a given protocol by characterizing how the observed scores compare to the extreme points on the dimensions by means of a formula regarding relationships between activity scores for the target and relevance weights the subject assigned to each activity scale. The activity scores and the relevance weights themselves are taken to be independent of context so that they can be entered into the formula without taking into consideration the issues regarding context noted above. Hence, the approach is based on the idea that meaning must be taken into account, but it does this in a way that assumes that in the final analysis we can explain it away.

The remarks I have presented to this point lead to a critique of *all* efforts in cognitive psychology that reflect the notion of uninvolved subjectivity. The critique applies to approaches based on empiricism and it applies to rationalist-based efforts as well. It is true that approaches reflecting the influence of rationalism, like Lamiell and Durbeck's research, depart from empiricist models in certain respects, but the point of my remarks has been to suggest a basis for criticizing contemporary cognitive psychology that identifies as the root problem assumptions that empiricist and rationalist approaches hold in common. If the perspective of involved subjectivity is right, any approach is misguided if it is based on the assumption that at bottom accounts of cognition do not have to include meaning and context.

It should be clear that the perspective based on involved subjectivity also leads to a challenge of the teleological approach. For one thing, the teleological approach does not identify what is wrong with the large set of efforts in contemporary cognitive psychology that reflect the influence of rationalism. This is an important omission if for no other reason than because it means that the approach fails to point away from a major misguided approach. Moreover, the rationalist approach can be very tempting, especially for those who recognize the limitations of empiricism. Indeed, Lamiell and Durbeck's research on impression formation is a case in point.

Of course, the challenge raised here to the teleological approach goes well beyond noting that proponents of the approach have failed to point out the

limitations of rationalist efforts, as if this were simply an additional point they left out of the critique they offer. This omission reflects limitations in the account of cognition the teleological approach does provide. The model of dialectical reasoning goes beyond an empiricist model by asserting that an idea *A* is always accompanied by thinking about *non-A* but, as I explained above, the teleological approach does not ask crucial questions about what knowing *A* is like. It does not include the idea that cognition is primarily a matter of practical know-how on the part of a subject involved in the world of shared practices so that meaning (not abstract meaning) and context play an irreducible role. In the teleological approach, as in the traditional approaches, cognition is viewed as if it involved understanding the world from the outside looking in.

### Metacognition

So far, I have discussed how the perspective based on involved subjectivity leads to conceptualizations of agency and cognition that are quite different from those proposed by the teleological approach. The shift from treating the process of a cognitive dialectic within the subject as fundamental to viewing the dialogue between the person and the social world as basic has one other implication that merits at least brief consideration. The issue here is metacognition, which Slife focuses on in his contribution. I believe that Slife's article makes the valuable contribution of highlighting the important role played by metacognitive processes. In addition, he makes useful distinctions among those processes (e.g., self-awareness, self-regulation) that reflect his appreciation of the fact that the phenomena subsumed under the general heading are not of a piece. Finally, he correctly points out that empiricist approaches do not provide the basis for developing adequate accounts of the phenomena in question. All of these points make good sense in terms of the perspective based on involved subjectivity. But although the perspective shares this much in common with the position on metacognition offered by the teleological approach, once again it leads to the conclusion that the teleological approach is off track in an important way.

According to Slife's position, there is a "metacognitive observer 'outside' the flow" of the information processed by the mind. Slife's view is that metacognition makes it possible to strike a third-person stance toward the self. Supposedly, it is possible to monitor one's life from a removed vantage point. The perspective based on involved subjectivity leads to a rejection of this view. If the person's involvement in the world of shared practical activities is bedrock foundation, then we can never truly view ourselves from outside. As I have already said regarding goals and cognition, the subject, too, is not on the side of the subject. We can never fully possess ourselves, because we are always already involved in the world of shared practices before we confront ourselves. In many ways this is a profoundly disquieting point of view. It brings with it a sense of alienation from the self that would not be called for if we could view ourselves in the way

Slife suggests. At the same time, I should note that the picture I am suggesting works against the sense of alienation from others that follows from models in which knowledge of self and others is taken to reside on the side of the subject.

It is important to point out that while the perspective based on involved subjectivity rejects the view of metacognition Slife suggests, it does *not* call into question the claim that metacognition exists. Furthermore, it definitely accepts the idea that metacognition plays a very important role. Although the perspective asserts that practical involvement in the world is primary, this does not mean that such practical involvement is the only thing that is "really" real and that metacognition is no more than a mere epiphenomenon that occurs alongside of action. Metacognition plays a productive role. Our involvement in the world of shared activity would be dramatically different if it were not for the ways in which we can (but not from the outside) call ourselves into question.

To be sure, many implications follow from this difference in viewpoints about metacognition. I can mention briefly one interesting set of implications that concerns the realm of psychotherapy. As I have discussed elsewhere (Westerman, 1984, 1986, 1987, in press), the idea that we can view ourselves from the outside plays a central role in traditional insight-oriented psychotherapy. Moreover, this view also plays a role, and in some cases an even greater role, in more recent cognitive-behavioral approaches to therapy. The view of metacognition that follows from the perspective based on involved subjectivity provides a new way of thinking about how insight-oriented interventions should be employed. In general, the point is that insight should not be viewed as a free-standing process that leads to change by itself. One specific suggestion that follows from the alternative perspective is that in order to be effective, insight-oriented interventions must be integrated with active interventions. If Wittgenstein's (1958, p. 108) comment is true that intentions are embedded in situations, then change involving the discovery and consolidation of new intentions cannot be accomplished in the abstract. In some measure, this idea is incorporated in psychodynamically-oriented psychotherapy by means of the concept of "transference work," but there are many ways in which therapeutic efforts still need to be informed by the view of metacognition suggested here [cf. Westerman (in press) for a more lengthy discussion of this suggestion and others that follow from the proposed view of metacognition].

### **Implications for Research**

It is essential to offer at least brief consideration of the implications that follow from the perspective based on involved subjectivity for research on cognition. Without doubt, these implications are profound. They are probably much more far-reaching than are the research implications of the teleological approach. The perspective I have presented challenges the basic assumption that there can be completely determinate, explicit accounts of cognitive processes. It

would not be *entirely* off the mark to suggest that such a viewpoint cuts directly to the heart of what the research enterprise is all about. But I do not believe this is completely correct. A great deal of research in cognitive psychology is based on this idea and, as I will indicate below, some of that research is inescapably linked to this notion, but there are ways of conducting research on cognition that are fully acceptable to the perspective I have presented. In fact, the perspective actually leads to an enthusiastic endorsement of certain types of systematic, empirical research.

It is crucial to make certain distinctions as a first step. The most important distinction is that some but not all research efforts in cognitive psychology are *necessarily* locked into the project of attempting to develop explicit accounts of cognition. Indeed, for the most part, this is only true of research in artificial intelligence (which, to be sure, represents an extremely large and important set of endeavors). If the goal of a research project is to produce a computer model of some human cognitive capacity, then there is no way around adopting the goal of developing an explicit model. The program will only work if it is based on an account of this type because whatever is or is not true about human cognition, machine processing requires a determinate model (cf. Dreyfus, 1979). Of course, if the critique offered here is correct, then such a project is ill-conceived. The computer will process information in terms of the program, but what it will be able to do will fall far short of what people can do. Even when it successfully simulates some human capability, it will do so in a manner that is different from how a human being would accomplish the same task (Dreyfus, 1979; Winograd, 1980). It should be noted that these comments notwithstanding, there is certainly a point to such research. Developing the machine capacities is valuable in and of itself, even if those capacities do not inform us about human cognition.

But there is another side to the distinction I have drawn. Many, indeed most, research endeavors in cognitive psychology are not locked into the enterprise of developing explicit models. In an experiment involving human subjects, the models of cognition under consideration do not have to be completely explicit. In fact, they rarely come close. Therefore, it is possible to investigate cognition in a way that is not chained to the misguided project of explication. This point is complicated. There are different ways an investigator can take advantage of this "liberty." One way is to continue to go about the business of attempting to develop determinate models (perhaps in a somewhat less rigorous way, but still taking the same goal as the objective). Unquestionably, much of cognitive psychology research reflects this tack. It is also possible, however, to take a very different approach to the research effort. In different degrees and more and less knowingly, researchers in cognitive psychology actually make use of the fact that most investigations do not require an approach based on complete explication in order to study cognition in ways that are quite congruent with the basic perspective I have presented (cf. Westerman, 1980).

Further distinctions can be drawn. For example, it is necessary to focus on issues most directly related to methods and other issues tied to matters about theory. While others (e.g., Mishler, 1979) who have criticized mainstream research in psychology for being too mechanical have focused largely on questions about methods, I believe that the methods commonly employed, although often far from perfect, represent less of a problem than the way theory limits the utility of research. An interesting, albeit complicated, example of this is Piaget's work. From the standpoint of the critique I have presented there is little reason for finding fault with Piaget's methods (this is not to say that they were beyond reproach in all respects nor that the relatively "soft" methods he employed are the only acceptable ones). On the other hand, his research was limited in several crucial ways because of his theoretical commitments. As noted above, in many respects Piaget accepted the idea that practical involvement in the world is primary, but there were also important ways in which his approach shows that he succumbed to the temptation of rationalism (cf. Bullock, 1987; Toulmin, 1972, pp. 423-444). Perhaps chief among these appearances of rationalist influences was Piaget's belief that cognitive structures can be defined formally in logico-mathematical terms. With this, Piaget shifted away from the idea that "knowing how" is primary to a commitment in favor of abstract models of cognition. This model has not held up well in the face of charges that it fails to account for the real specificity of cognitive development as reflected, for example, by the extremely common appearance of horizontal decalage. When one compares Piaget's research to that conducted by Fischer (1980), which is based on Fischer's skill theory of cognitive development, it is clear that Piaget's theory (specifically its rationalist aspects) limited his research efforts. At the same time, this comparison highlights the fact that given a theoretical approach that goes beyond the limitations of models based on empiricist or rationalist influences (as is true about Fischer's theory, which takes the context-dependence of cognitive development as a central tenet), it is without doubt possible to pursue constructive empirical work.

This point about Fischer's theory is related to one other idea about how research on cognition is by no means ruled out by the perspective based on involved subjectivity. At this point, I will shift from consideration of the role played by theory to an observation about the nature of a researcher's objectives. In many studies of cognition, researchers set up a procedure in order to investigate how some cognitive process works. Most commonly, and unfortunately, the procedure is viewed as a (hopefully) representative situation, that is, as a good one for learning about the process "in general." But there is a way to change this objective so that the research effort fits very well with suggestions that follow from the present critique. It is quite possible to take as one's goal investigating how the process works *in this situation*. When approached in this way, research can provide extremely valuable findings about cognition in a way that not only

recognizes its context-dependence, but clarifies and amplifies our understanding of this context-dependence. Similar alterations of research goals can lead to moving away from studies aimed at explaining away meaning to investigations that add to our knowledge about the irreducible role played by meaning. Such endeavors are strongly endorsed from the vantage point of the critique presented here. If cognition is based on practical involvement in the world, then efforts of the type just briefly described are essential. The phenomena of interest are embedded in the world. They can only be elucidated by a hands-on, empirical approach.

### Concluding Comments

Throughout my remarks, I have attempted to accomplish two things. One goal has been to underscore the considerable achievements of the teleological approach. The other has been to present an alternative perspective that in certain respects departs quite markedly from the teleological approach. In these closing remarks, I would like to turn directly to each of these themes.

The accomplishments of the teleological approach are indeed noteworthy. These accomplishments include leveling a very powerful critique against contemporary cognitive psychology on the basis of conceptual/theoretical considerations and empirical evidence. I believe that this critical thrust is for the most part right on target and I agree with the proponents of the teleological approach that this target is an important one to challenge. Furthermore, although I have raised numerous challenges regarding the positive contributions of the teleological approach, I do not believe that the accomplishments of the approach are limited to its critical observations about cognitive psychology. In particular, I believe that Rychlak's model of dialectical reasoning represents an important contribution. It is true that I believe that the model does not go far enough in challenging traditional approaches to cognition to serve as an adequate basis for a general view of cognition, but I am quite ready to believe that the notion that our thinking involves the capacity to move between an idea and its opposite should occupy a place of importance in our approach to cognition.

Of course, my remarks included the second, more critical, theme as well. The perspective based on involved subjectivity leads to holding many positions in common with the teleological approach, but it is certainly a very different viewpoint. There are important differences even when it comes to challenging contemporary cognitive psychology. For one thing, in my opinion, the perspective based on involved subjectivity does a better job of identifying the core failings of cognitive psychology (so that the limitations of rationalist-influenced efforts can be recognized in addition to limitations in work based on the tradition of empiricism). The differences between the two approaches appear all the more prominent in terms of the positive accounts each offers of agency, cognition, and metacognition. The perspective based on involved subjectivity leads to a view of agency that centers on interdependence and conditional freedom, a



picture of cognition in which meaning and context play the pivotal role, and an approach to metacognition that acknowledges the importance of such phenomena but also insists that we are never transparent to ourselves because we are always first-off involved in the shared world of practical activities. These claims stand in sharp contrast to the positions advanced by the teleological approach.

Along the lines of the first theme, I have attempted to offer my remarks as a way of joining forces with the teleological approach. Along the lines of the second theme, I have endeavored to indicate as clearly as possible the respects in which the two perspectives part ways and to argue in favor of the merits of the perspective based on involved subjectivity.

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