This response addresses three main points raised by the commentators. The first point concerns our use of the term implicit memory; the second point involves the terms and notions, enactment, unformulated experience, and dissociation; and the final response concerns the concept of objectivism in our use of ideas from other fields.

We want to express our pleasure at taking our turn as the “accompanists, audience, and even soloist as we read and experience our own embodied responses” to these papers (this issue, p. 152). To continue Knoblauch’s musical metaphor, these various
commentaries constitute a “rich polyrhythmic weave.” We have not attempted to take up all the points mentioned in the commentaries; rather we respond to the key points that address central aspects of our thinking. The first point concerns our use of the term *implicit memory*; the second point involves the terms and notions, enactment, unformulated experience, and dissociation; and the final issue concerns the concept of objectivism in our use of ideas from other fields.

**The Status of the Concept of Implicit Memory**

Modell expresses his concern about the limitations he attributes to the cognitive science view of procedural memory. However, from the beginning we have not been content to be confined by the existing definitions of procedural or implicit memory in cognitive science. In our earliest group publications, we pointed out the lack of consideration in cognitive psychology of the entire relational domain, namely, what happens when someone is seen in ongoing interaction (Lyons-Ruth, 1999; Stern et al., 1998). Instead we offered the term *implicit relational knowing* to define the representation of the relational domain of interest to us and to psychoanalysis more broadly.

Modell mentions our reference to procedural memory; however, the entire quote regarding procedural memory goes beyond reference to the procedural memory of riding a bicycle to say

Most of the literature on procedural knowledge concerns knowing about interactions between our own body and the inanimate world (e.g. riding a bicycle). There is another kind that concerns knowing about interpersonal and intersubjective relations, i.e. how 'to be with' someone (Stern, 1985, 1995). For instance, the infant comes to know early in life what forms of affectionate approaches the parent will welcome or turn away, as described in the attachment literature (Lyons-Ruth, 1991). It is this second kind that we are calling *implicit relational knowing*. Such knowings integrate affect, cognition, and behavioral/interactive dimensions (Stern et al., 1998, p. 904).

This is a far cry from riding a bicycle.

The narrow frame surrounding procedural concepts is a lack in the cognitive sciences. Thus, much of cognitive psychological literature on the topic of implicit memory is of limited relevance to our work. However, in contrast to experimental studies in cognitive psychology, studies of
brain-damaged patients have clear relevance to our concepts in that they establish that implicit memory involves value-laden or emotion-laden action and can be recontextualized by experience in the absence of any capacity for explicit memory.

No human memory system lacks the potential for continual recontextualization in the light of further experience. As Modell notes, across human and animal species, traumatic threats to survival that produce extreme fear-based memories are more recalcitrant to change. However, this caveat applies across memory systems and is not specific to implicit memory. Freeman (1994) demonstrated that recontextualization occurs even in the primitive case of the rabbit’s olfactory memory, where he showed at the neuronal level that the existing synaptic connections encoding a particular smell were reorganized when the rabbit was exposed to a second smell.

All forms of memory—implicit, explicit, and autobiographical—are subject to recontextualization in the light of further experience. In the case of implicit memory, this is clearly demonstrated in the famous case of the brain-damaged patient of Claparede (1911/1951), a woman who had lost all explicit memory capacity. After many cordial meetings with Claparede, one day the patient refused to shake his hand. However, she did not remember ever meeting with him before, nor did she know why she refused to shake his hand. She was not able to recall that the day before she had been pricked with a pin hidden in Claparede’s extended hand (case cited in LeDoux, 1996). Additional examples of this kind of dissociation of explicit/implicit are available in Damasio (1994) and Ledoux (1996). These examples make clear that implicit nonconscious learning occurs in domains that are emotion laden (value laden), relational rather than motor, available to recontextualization with new experience, and potentially translatable to semantic memory.

We are in agreement with Modell that “an intent is the directing of action,” that “an intent represents an unconscious selection of value,” and that “meaning is achieved through action in the world” (this issue, p. 166). Modell’s account leading up to this point, however, would imply that action is directed either by values that are unconscious and unintegrated (not recontextualized in Modell’s terms) or else by “salient autobiographical memories” (this issue, p. 166). We do not feel that these two alternatives are adequate to capture the fluent and organized nonconscious knowings about how to relate to others that characterize the relational domain, a domain that is arguably the largest area of human learning and experience. We continue to believe that we need the concept of relational knowing in the implicit domain, as opposed to autobiographical memory or
unintegrated unconscious memory, to account for this vast domain of knowing. We also believe, as we have stated (Boston Change Process Study Group, 2007), that the implicit is distinct from Freud’s unconscious, which requires the idea of repression.

It has been previously noted that we do not refer to Freud very often, a point repeated in these commentaries. We, as well as most readers, have been deeply involved with psychoanalytic thinking and with Freud’s thinking in particular over many decades. However, we feel that citing his exact words is no longer necessary. Modern physicists don’t continue to cite Newton. Elementary particle physicists don’t continue to cite Einstein. Freud doesn’t need to be continually cited. His ideas are common currency and taken for granted as a foundation for modern psychodynamic thinking.

Regarding Enactment, Unformulated Experience, and Dissociation

The concept of implicit relational knowing would include enactments but is broader than that of enactment, which is but one variety of implicitly represented nonconscious experience. Enactments may be one way that particularly dramatic or problematic ways of proceeding in relationships become clearer in the treatment. D. B. Stern feels that implicit relational knowing includes neither the intensity of the personal relationship that analysis is nor the specificity of the two persons involved. We feel that implicit relational knowing includes knowing about relations between patient and analyst, can certainly be intensely personal. However, the term enactment, which is generally used to refer to problematic clinical encounters, does not include the breadth and specificity of the term implicit relational knowing, and they should not be confused with one another.

In addition, although we agree with Stern’s view that there are similarities between the concepts of “unformulated experience” and “implicit relational knowing,” we want to point out that the concept of implicit relational knowing is much more specific regarding the primary form taken by the representation of relational experience. The notion of unformulated experience does not describe the character of the experience before it gets formulated. In contrast, implicit relational knowing advances a very clear model of how relational experience is initially represented.

Finally, the therapeutic utility of enactment is most commonly viewed as residing in the offering up of unconscious or dissociated content into the conscious domain for potential discussion and conversion into “formu-
lated” or reflected-on experience. However, we do not see “reflection-upon” as a necessary ingredient of the change process in the implicit domain. Instead, we feel that change can occur in the process of the interaction itself, whether or not the form of the interaction becomes the subject of explicit discussion between patient and therapist.

Knoblauch raises the question of dissociation. The status of dissociation is an enormous topic beyond the purview of this response. Suffice it to say, we regard primary dissociation as part of the implicit domain.

**Major Moments in Therapy Versus Minor, “Banal” Moments**

There was a concern that the Boston Change Process Study Group fails to include “intense personal entanglements” in its clinical considerations, so that its concepts are most appropriate for the less intense moments in a psychotherapy. In fact we began our inquiry as a group by taking up the particularly intense, unanticipated *now moments* in the therapeutic interaction. However, we recognized that much of therapeutic action takes place outside such heightened moments or enactments. Given this, we found it important to elaborate a model of change that could account for what is occurring in the less intense moments of the treatment. It has permitted us to see more clearly the uncertainty, unpredictability, and potential creativity that are features not only of heightened moments but of all therapeutic interaction. It has also forced us to think about the inherent sloppiness of the spontaneous talk between therapist and patient as a cocreative emergence with much therapeutic potential (see Boston Change Process Study Group, 2005).

**Is Our Position Objectivist?**

We are perplexed by the critique that our position is “objectivist.” This seems to stem from our using notions from dynamic systems theory, cognitive psychology, and developmental psychology in fashioning our account of meaning. We feel strongly that to further our understanding of the relational domain and to remain relevant as a field, we need to have continued dialogue with ideas from outside psychoanalysis per se.

The commentators ask, What have these imported notions “illuminated that would otherwise have remained invisible”? We would expand this question to include not only aspects of therapeutic action that might have
remained invisible but also those aspects that might continue to be underspecified and poorly grasped.

In general, new developmentally and scientifically grounded vantage points allow us to see some of our traditional concepts in a fresh light as well as to frame new concepts. In our own case, the new concepts that evolved from our exposure to other fields include psychodynamic theory’s obvious need for a notion of relational representation beyond identification and incorporation, both during the preverbal period and throughout the life span; consideration of the various forms that such representations could take; the “sloppy” cocreative nature of spontaneous therapeutic interaction; a dynamical systems model that introduces emergent properties that offer therapeutic opportunities; the utilization of microanalytic techniques of observation to bring into focus the “local level”; and finally, a model of therapeutic change specific to the domain of implicit relational processes.

REFERENCES


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