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The Lost and Found Experience: Piaget Rediscovered

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Introduction

Jean Piaget is one of the most influential figures in constructivist teaching movements of our time. He began publishing in the early 1920s on children's logic, reasoning and especially the relation of language to thought amidst the child study movement and the progressive education movement in both the U.S. and Europe. For the decade to follow, the English translation of his work entered the discourse of child psychology in the United States. In the 1930s Piaget shifted his focus onto infancy, and also spent much of his time in promoting an international understanding of public education. Then, World War II broke out. In these contexts, the U.S. intellectual discourse referring to his work diminished for more than two decades.

In 1964, a new book entitled *Piaget Rediscovered* caught public attention. It was a collection of papers from a bi-coastal conference at Cornell University and the University of California, Berkeley, on developmental psychology and curriculum development. Today, constructivist educators interested in applying Jean Piaget's work often ask, "What exactly was rediscovered when Piaget was rediscovered in the 1960s?"

The argument in this article is that the discovery and rediscovery of Piaget was most evident in the field of education—that is, in various personal and social endeavors to improve people's learning in school and at work. I will recount two notable endeavors in the 1920s and the 1960s that were experiences of discovering and rediscovering Piaget. These experiences are not commonly known in the discourse about constructivist teaching, but provide several shared insights of

interest to constructivist teachers. In the end, I will describe these insights and their implications for constructivist teaching.

Circumstantial Rediscovery

Many well-known developmental scientists in the United States take notice of the rediscovery of Piaget and point us toward some explanations. An educational psychologist, Frank Murray (1992) believes that Piaget and his colleagues were “virtually the only psychologists before the 1960s to write about how children understand concepts” (p. 287) that were important to school curricula. Harvard psychologist Sheldon White (2000) reminds us, “The Civil Rights movement and Head Start prepared a social cradle that rocked Piaget’s influence into fast growth.” A key observer in developmental psychology, Roger Brown (1970) credits a wide range of intersecting social and intellectual forces in the 1960s: “Then computer simulation, psycholinguistics, curriculum reform, and mathematical models altered our notions of the scientific enterprise in such a way as to cause us to see Piaget as a very modern psychologist.... the great psychologist of cognitive development” (p. x). In reference to graduate education, experimental psychologist Jerome Kagan (1998) added, “Piaget’s work offered many handy experiments that graduate students could do for their theses: simple, elegant and replicable. The experiments did not require sophisticated training.”

Although these accounts indicate that fertile soil existed for Piaget’s theory to take root in educational settings, they are primarily circumstantial. They speak to the social and intellectual conditions necessary to receive Piaget’s work, but they do not address *what* was rediscovered. In a familiar technical term, perhaps we can say much of the psychologists’ rediscovery of Piaget was an “upgrade” from a lower to a higher level. Jerome Bruner (1983) recalls that in the 1940s at Harvard, “We all knew about Piaget. I cannot remember a time when I didn’t! I had read him on language and thought, on moral judgment, on physical causality. I had found him fascinating, but not as *theorist*” (p. 133). This agrees with John Flavell’s observation in 1962, “It is a fair guess that the average psychologist today is still likely to respond “animism” to the stimulus word “Piaget” (p. 14). Animism was used by Piaget to describe children’s tendency to regard non-living objects as living. In short, it is possible that the rediscovery here was to upgrade Piaget from non-theorist to theorist, reflecting a transition from behaviorism to the Piagetian scientific endeavor to explore human thinking.

While keeping the above insights in mind, I would like to take another perspective and suggest a substantive aspect of the rediscovery that took place in the early 1960s. That is, there was a rediscovery of the need to work closely with people and to be sensitive to people's thoughts and feelings in the teaching-research process. I will start with one personal account on the meaning of "Piaget rediscovered" – a phrase Eleanor Duckworth idiosyncratically used to describe her own experience as a researcher and a teacher in the Elementary Science Study. I will then examine another very different kind of discovery of Piaget which occurred in 1929, when Piaget's clinical method was applied in the famous Hawthorn studies. Following these earlier practitioners, I will suggest a three-fold constructivist message that can be learned from these discovery and rediscovery experiences: (1) It is necessary to be actively involved in the field of learning and teaching as a researcher-practitioner; (2) This involvement comprises continuous struggles and responsibilities; (3) It is important to welcome further complexity associated with participation and research in the field.

Piaget and Science Education in 1964

Many educators and psychologists in the early 1960s believed that it would be profitable to investigate the relationship of cognitive studies and curriculum development, especially in science education (Rockcastle, 1964). Scientists' attention to education had already begun to grow after World War II, and even predated the first shock wave of the Soviet Sputnik in 1957 and Woods Hole Conference in 1959. One prominent example was the Elementary Science Study (ESS) of the Education Service, Inc. in Watertown, Massachusetts. A group of university scientists initiated this decade-long study, and later involved hundreds of scientists, engineers, mathematicians and K-8 teachers in classrooms (Duckworth, 1964b; ESS, 1966/1970).

The core approach of the ESS was, first of all, to "[put] physical materials into children's hands from the start and help each child investigate through these materials the nature of the world around him" (ESS, 1966/1970, p. 7). The participating scientists and teachers had to create materials that were inexpensive enough for children to use, simple enough for children to handle, but rich enough in possibilities that would lead to more interesting problems. This proved to be an approach that Piaget (1973) would favor.

Up to 1964, this fledgling ESS project had kept its distance from psychologists. "As in other curriculum projects, the influence of psychological approaches is seen

to be minimal” (Duckworth, 1964b, p. 119). Between 1962 and 1964, only one staff member had academic preparation in psychology. That was Eleanor Duckworth, a young Geneva-trained psychologist, who later coined the phrase “Piaget rediscovered” in her presentation of ESS at the aforementioned conference on developmental psychology and curriculum development.

Duckworth first discovered Jean Piaget in Paris and studied with him and Bärbel Inhelder in Geneva in the late 1950s. She began to participate in the ESS project in 1962 at Inhelder’s recommendation. Duckworth so recalled her years in ESS:

“When I started with ESS, I was thinking that they would want me to know about stages, and about the specific ideas that kids believe at certain ages and how they would think about weight and volume, and how those ideas developed, specifically kids’ ideas and stages” (Duckworth, 2000). This understanding was not atypical for a psychologist, but her expectation did not match well with the reality of working with the scientists on the staff. As a researcher and a pilot teacher in classrooms for the Elementary Science Study, she found that she the psychologist was not of any special help; the scientist without psychological knowledge was not less effective. For almost two years, Duckworth worried, “Not only Piaget seemed irrelevant, I was no longer sure he was right” (1996, p. 2).

A turning point came after two years of her struggle to better understand how Piaget would be most useful for teaching. Having spent hundreds of hours talking to children and following their ideas, she rediscovered Piaget! “For me,” she said, “through my experience with Piaget of working closely with one child at a time, I gained a wonderful background for being sensitive to children in classrooms. I think that a certain amount of this kind of background would be similarly useful for every teacher” (Duckworth, 1996, p. 4). Since then, this awareness of sensitivity has continued to be central in Duckworth’s educational thought and effort, with an ever-deepening understanding of Piaget’s relevance to education.

How to apply Piaget’s ideas to education gradually crystallized from her experience *in* classrooms. “What I saw at the ‘Piaget Rediscovered’ Conferences held at Cornell and Berkeley in 1964 were other aspects of the theory that were important for education, apart from stages and apart from specific kids’ ideas, but the whole idea of assimilation, the ideas which I developed ever since” (Duckworth, 2000). What Duckworth is describing is a rather idiosyncratic leap, away from a narrow focus on one idea, one task, or one stage at a time to broader insights about the notion of assimilation. Her insight in turn informed her teaching-research approach, using an extended clinical interview or the critical exploration method, which was developed from Piaget’s clinical method (Duckworth, 1996). This method amplifies the constructivist notion that teachers in their daily

professional life play multiple roles that are connected one to another in practice: teacher, learner and researcher. To teach is first to learn from the learner, in the same way the researcher tries to understand the thinking of the learner, and to use research findings to inform her teaching. Interestingly, a similar discovery of Piaget had been made more than thirty years earlier, in a very different context: the famous Hawthorne studies of the 1920s.

Piaget and Industrial Research in 1929

Many people in psychology, sociology, industrial anthropology, and education are familiar with the term “the Hawthorne Effect,” meaning that people change their behavior if they know that they are part of an experiment. Hawthorne was a factory of the Western Electric Company, a subsidiary of AT&T. Beginning in 1924, this company made various changes in the factory’s physical space, in an attempt to improve workers’ productivity. Interestingly, the workers were more productive no matter what the change—for example, workers worked harder when the lights were brightened, but also when the lights were lowered, suggesting that workers were simply responding to the knowledge that an experiment was being conducted in their facility.

Puzzled by the results of experiments on the factory’s physical environment, the Hawthorne researchers began to raise a different kind of question. Instead of addressing the problems of physical conditions, they asked a number of questions about the human interactions that affect social cooperation at work: What makes good supervision? What makes good working conditions at the workplace from the worker’s point of view? The new questions placed complex human relations at the center of the inquiry (Mayo, 1933, pp.53-73).

In 1928, the Hawthorne plant created an interview program to gather factual data directly from workers. “In the beginning they hoped to get ‘facts’ in the strict sense. From the data they hoped to improve working conditions and company policy. But what they did get from the interviews was an inextricable mixture of fact and sentiment” (Roethlisberger, 1945/1968, p. 31). This led to a reconsideration of the interview method for research. The interview team sought help from Elton Mayo, a consultant from the Harvard Business School, who had been an advocate for field based research in attacking industrial problems such as conflicts in group work, labor turnover and low productivity. His approach to investigating the problems was to pay attention to workers’ thoughts and feelings, and to learn how workers made sense of their living and working environments.

Mayo's influence on the interview program culminated in his persuasion and guidance on using "the Piaget method"— "In its essence this method ... is at first a conversation, social and personal, between the child and the adult observer. The adult has to train himself to listen rather than talk, to permit problems to emerge rather than suggest them" (Mayo, 1930, p. 145).

These words unmistakably convey a principle that Piaget (1926/1960) insisted upon in describing his method: "The good practitioner lets himself be led, though always in control, and takes account of the whole of the mental context" (p. 8). They also hint at the need for adopting the rules for diagnostic evaluation that Piaget discussed, concerning how to evaluate children's comments. Mayo assimilated these principles from Piaget's *The Child's Conception of the World* into a set of guidelines for the interviewers. Gradually, "the Piaget method" entered into the innovative interview program at Hawthorne.

This unique program, however, did not adopt "the Piaget method" without resistance, confusion, and painstaking efforts. Initially, the interviewers discussed how to rein in the diverging conversations with workers by asking predetermined questions. But Mayo urged them to listen rather than talk; not to give advice but to let the worker talk freely; to learn more about the worker rather than take the worker's rationalization for granted; and to be sensitive to what the worker said and did not say. Over six months of interviewing, the researchers began to take up "the Piaget method," at Mayo's urging. These changes on the interviewers' part embodied a difficult transformation from the detached observer of factual data to the participating observer of the worker's thoughts and feelings. In the process of following the thoughts and feelings of 20,000 workers, the interviewers became capable of using clinical interview skills (Roethlisberger & Dickson, 1939).

Elton Mayo found in Piaget's work a key understanding of the formation of social cooperation. Cooperative attitudes and activities are not innate in us, but need to be nourished by supportive social life. In providing this support, the sensitivity of the interviewer to the worker was essential. Mayo helped the interviewers develop this sensitivity to discern, capture and relate big and small turns of the worker's thought, long stories about personal matters, and emerging problems in the total mental context of the person. Unfortunately, all of these sensitive explorations of people's thoughts and feelings were somewhat out of step with the scientific psychology of the day, although practitioners like psychiatrists and counselors also embraced these principles. This important discovery of Piaget quickly faded into a lost memory, even within Harvard University.

Lost and Found Experience

Frankly, the two stories I have told do not intersect with each other in time and space. One was in the burgeoning industrial research of the 1920s, and the other in the elementary science education movement some thirty years later. But across time and space, they shared one inspiration: Jean Piaget and his clinical method; they reflected a number of common ideas and experiences, drawing on Piaget's work. The most noticeable commonality is the emphasis on being sensitive to the thoughts and feelings of people, be they children, teachers, workers, or in a general sense, all learners.

Also, in the two stories, the researchers did not come to adopt and value Piaget's method without a long period of struggle in their fieldwork. Duckworth was deeply involved in the study of elementary science, a field in which she was frustrated but unremitting. She discovered the connection between Piaget and teaching-learning with great difficulty and over a period of two years. Similarly, in the beginning, Mayo's suggestion did not make sense to the Hawthorne interviewers, who resisted and did not feel comfortable in abandoning predetermined questions. From the time they began to adopt "the Piaget method" until the time they became skilled, a period of two years elapsed. Constructivist teachers are likely to experience a similar struggle as they strive to incorporate Piaget's work into their own.

Another commonality in the two accounts is that these people assumed responsibility for the changes they were trying to make, either in children's school learning or in workers' social learning. In other words, they played the role of practitioners at the same time that they were engaged in research. At the Elementary Science Study, the goal was to teach science so as to facilitate children's learning of natural phenomena. Duckworth and her colleagues assumed responsibility for introducing changes into the classroom and following up on the changes for further investigation. At Hawthorne, the goal was to improve supervision and working conditions. The interviewers were involved in workers' daily life through their conversations. They furthered their investigation on the basis of earlier conversational experiences with workers. Their direct involvement with workers placed them in the position to bring change in management and facilitate group collaboration in the workshop. Thus, to help people learn meant to get involved with people.

The above multi-layer commonality in the discovery and rediscovery stories can be made clear through a three-fold message that Elton Mayo was suggesting to social scientists (in Roethlisberger, 1962/1968) at the time he tried to apply Piaget to his own work. This message articulates some constructivist principles that educators may find meaningful in teaching, learning and research, especially as they ponder what research knowledge means in making positive changes in people's life in an educational setting:

1. A better understanding of people's thought for an educational purpose comes from direct observation and involvement by the teacher-researcher, not by her trying to integrate psychology and sociology at higher levels of abstraction.
2. This understanding is more likely to occur when the teacher-researcher takes responsibility for what happens in the situation she studies, i.e., when she does research under the burden of responsibility as a participant, rather than a detached researcher.
3. The burden of responsibility presupposes the teacher-researcher's acceptance of her predicament and struggle in making sense of the events and processes as part of her taking responsibility. This acceptance gives rise to further complexity, i.e., the development of a new understanding of her relation to her learners.

In light of this three-fold message, Duckworth seemed to have idiosyncratically rediscovered Piaget in 1964s and at the same time she rediscovered, or re-invented, many parts of the earlier discovery of Piaget in 1929. And yet, this message was somehow lost in many earlier efforts to apply Piaget's work to education until the recent widespread constructivist movements and the essential school movement. The constructivist movements have re-awakened interest in Piaget's work not just as a way to conceptualize children's development, but also as a way to conceptualize our own work as educators.

The Message for Constructivist Teaching-Research

How can this three-fold message materialize in our everyday learning and teaching situations? The answer may lie in the teacher's conscious effort to help children learn, an effort that, every constructivist teacher knows, starts from what children know, and how they make sense of the subject matter. At the same time, it is also an effort that starts from what the teacher knows and how she makes sense of children's learning, thinking, feeling, and verbalizing. The interweaving of these

two efforts shapes a sequence of the circling, or spiraling activities that Duckworth (1996) calls teaching-research.

Teaching privileges the teacher with a shared life with children; but more important is that teaching provides the teacher with the best research opportunities to understand children's and the teacher's own learning. Unlike those who do research projects in classrooms but are otherwise detached from classroom life, the teacher-researcher's activity is full of responsibilities. She is part of children's daily life, and a participant in children's daily learning, thus having increasingly complex relationships with the children in her classroom.

The implication of the three-fold constructivist message probably resonates in the reader's mind with similar approaches such as "action research" and "participatory research." The essence of these approaches is to be involved in people's life and make changes to improve their life. This is also true for constructivist teaching. To help people learn is to help them develop their ideas. After years of struggle to find the relevance of Piaget to education, Duckworth (1996) learned this insight from working closely with teachers: Teaching is in part "being" Piaget, — always being curious about children's thinking, being directly involved with children's learning, and being part of their knowing. And from these "beings" comes something in constructivist teaching that goes beyond Piaget – continued efforts to develop relationships for the purpose of making changes, for the better, in children's learning.

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