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## **Tribute to Jeanne Bamberger: Pre-eminent Student of Musical Development and Cognition in Our Time**

By

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Just about 40 years ago, I was completing my doctorate in developmental psychology at Harvard. I was also a founding member of Harvard Project Zero, a small research group whose members were examining the philosophical and psychological facets of artistry. Through a connection that I don't recall (probably a mutual friend of one of the members), Jeanne Bamberger, a newcomer to Boston, had found her way to Project Zero, and that is how we became acquainted.

Shortly after her arrival on the scene, Jeanne and I heard that two mathematicians-turned-computer scientists, Marvin Minsky and Seymour Papert, were giving a pair of lecture-demonstrations at nearby MIT. One Saturday I found myself accompanying Jeanne to this event. We paid careful attention as these two eminent geeks (as we'd now term them) were introducing a new computer language called Logo and speaking about the educational uses of computers.

Jeanne and I were both fascinated by the discussion. I am not the kind of person who remembers much from forty years ago, but I recall that we decided to have lunch at the S and S delicatessen near Central Square in Cambridge, just so we could continue our animated conversation about what we were learning that day and what it might bode for

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our future work. The Minsky-Papert initiative affected many individuals interested in improving education—and I believe it is fair to say that it changed Jeanne Bamberger’s professional life. Due to this coincidental confluence of events, I feel I have had a ringside seat, observing Jeanne’s career from the time that it first began to assume its current impressive shape.

Jeanne was unlike anyone I had met before and only gradually did I learn some details of her life. Apparently, she had come to Boston from Chicago where she had taught in the humanities program at the University. In Chicago she had also become interested in the education of young children and particularly the Montessori method. Earlier in life, in Minneapolis, she had been a piano prodigy, performing with the Minneapolis Symphony before she had reached adolescence. Her mother had a strong interest in psychology and had studied with Florence Goodenough, one of the pioneers in the systematic study of children. After childhood, Jeanne had attended the University of Minnesota, the University of California Berkeley, and studied with the renowned pianist Artur Schnabel as well as the equally eminent composer Roger Sessions. Jeanne was also a philosopher, well versed in psychology, a mother of two attractive young boys, and a magnanimous host who had no trouble whipping up a tasty lunch or dinner at a moment’s notice. Nor was she at all intimidated by computers; as I recall, her husband was actually involved with computers. We soon became friends.

It was only a matter of time before a scholar with deep knowledge of music began to apply to that field the kinds of developmental observations and interventions that Jean Piaget, the great Swiss scholar of cognitive development, had carried out with reference to thinking in the sciences. As I watched Jeanne at work in the 1970s and thereafter, it

became clear to me that Jeanne was that person: the pre-eminent scholar of musical development and cognition in our time.

From the beginning, Jeanne has put her unique stamp on this material. She has that rare gift of making original observations, perceiving their import, pondering their implications for periods of time, and then revisiting them in the light of appropriate analytic concepts – often ones which she has invented herself. This iterative process has characterized her work over the decades as she has developed ways of elucidating children’s rhythmic understandings, melodic mastery, fledgling notations, early instrumental performances, and the like. The observations that she has made and the distinctions which she has introduced (e.g., figural vs. formal, multiple representations, the “mid-life crisis” in prodigies) are now so widely known among music educators and cognitive psychologists that often they are no longer credited to Jeanne – they are simply assumed to be the basic knowledge of the field. Indeed, I discovered that even in China, musicians and music educators raise questions which, it turns out, are based on discoveries made by Jeanne Bamberger since her forays into psychology began in earnest in the early 1970s.

Extending beyond her work in the psychology of music, Jeanne has become an important thinker in the cognitive sciences. While a deep concern about music has always been central to her work, she views musical cognition as a paradigmatic example of thinking and acting. Therefore, her work in the aforementioned areas has had meaning not only for individuals engaged in music or in other art forms. Her work has also captured the attention of psychologists, educators, philosophers, cognitive scientists, and others interested more generally in the relation between thought and action, the affinities

and tensions among various modes of representation, the nature and status of different notational systems, and a raft of other fundamental epistemological issues. Indeed, I think it is appropriate to think of Jeanne as an epistemologist, I would go so far as to suggest that, if Piaget had been immersed in the study of musical cognition, that “genetic epistemologist” would have approached problems much in the way that Jeanne has.

Over the years, Jeanne has steadily deepened our understanding of the major issues in the development of musical thinking: children’s evolving comprehension of basic concepts like rhythm and pitch; the developmental challenges encountered during adolescence; the cognitive issues involved in various modes of representation and the manners in which they are coordinated or fail to be coordinated. In 1991 she published what I regard as her magnum opus, *The Mind Behind the Musical Ear*. In this work, she brilliantly brings together her major theoretical concepts in an imaginative set of scenarios. Jeanne’s book was soon recognized in many areas of scholarship and, though the word has become overused in recent years, it merits the term “classic.”

Usually when one thinks of a prodigy, one thinks of a person whose life had peaked early. Jeanne developed the notion of the “mid life” of the prodigy as occurring sometime during the second decade of life. However, while some prodigies may have coasted after their meteoric youth, Jeanne completely belies any equation between prodigiousness and a peak in early life. Indeed, over the years, her ideas and her oeuvre have steadily grown and deepened. At an age where most individuals have long since retired, she remains impressively active in mind and spirit. When one talks to Jeanne or reads her writings, one encounters an inspiring blend of ingenuity, creativity, and wisdom.