Dynamic Assessment: A History of Fundamental Ideas[[1]](#footnote-1)

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It is clear that dynamic assessment as we know it in its diverse forms today is a product of many ideas of greater and lesser importance. My focus today is on the ideas that can be thought of as seminal, as *sine qua non* in the development of dynamic assessment. I have no doubt that some important ideas will be left out, for which I apologize in advance. You will see also that I will not have given proper attention to the *persons* who have contributed to the development of dynamic assessment, preferring instead to focus on the progression of ideas and concepts that, to my mind at least, have been inescapable. You will recognize this as the Zeitgeist approach to historiography, as opposed to the “great man—great woman” approach (Boring, 1929, 1950).

*Individual differences*. The first of these great ideas is that people differ from one another in interesting, influential, and measurable ways. Although some of the earliest experimental work in the psychology of human abilities was devoted to measurement of ways in which persons differ from each other (e.g., Galton, 1869), the budding science of psychology driven by Wilhelm Wundt and William James was powered by a nomothetic emphasis, that is, an insistence on general laws of human behavior that would be applicable to all or most individuals. Indeed, Wundt defined the mission of psychology as “the study of the normal, human, generalized, adult mind”—as if they were all alike. Galton had, however, pioneered and established the field of differential psychology, the psychology of individual differences, and tried to nourish it even prior to the establishment of the Leipzig and Harvard laboratories of psychology. In spite of Galton’s work, the field had bypassed individual differences so egregiously that by 1895 Alfred Binet and Victor Henri (Binet & Henri, 1895) were inspired to publish their famous paper entitled *La Psychologie Individuelle* (The Psychology of Individual Differences), making a reasoned and compelling plea for regarding differences among people as a legitimate focus in scientific psychology rather than considering such differences to be annoyances to be treated as error. The study of individual differences came quickly to be associated with the psychometric movement, that is, psychological testing, because tests constituted a convenient method of assessing individual differences. Once obtained, test scores had to be interpreted. It was not enough to know that a person had answered 67 percent of the test items correctly, or had discriminated two points touching the skin simultaneously at a distance from each other of only 6 millimeters. Psychologists began immediately to interpret the test performance of individuals in relation to the performance of other individuals on the same tests. In other words, one’s test performance was given meaning only as a comparison—ultimately in rank order—with other persons. After much Sturm und Drang, psychology finally came to recognize an important difference between two scientific approaches: nomothetic science, or the seeking of broadly generalizable laws, and idiographic science, that is, emphasis on personal and unique characteristics. Haywood and Lidz (2007) have argued that dynamic assessment is essentially an idiographic enterprise, seeking to identify for each individual that person’s unique qualities, strengths, weaknesses, and personal learning styles, and to discover individually effective methods for maximizing individuals’ learning effectiveness. The particular importance of an idiographic method in dynamic assessment lies in its distinction from a normative approach, whose goal is to compare individuals with each other and thus to assign each individual a rank relative to other test takers. Thus, rather than placing people in categories according to their rank with respect to others, dynamic assessment is often instrumental in taking people out of such categories by demonstrating ways in which they have been falsely classified.

Exactly 100 years ago, Binet published his famous and influential book entitled *Les Idées Modernes sur les Enfants* (*Modern Ideas About Children)* (Binet, 1911). Commenting on cases in which one has observed children to be deficient in their classroom learning, and emphasizing the importance of diagnostic study of such cases, Binet wrote (pp. 39-40):

“This is no longer a time to do group studies, but rather individual searches. When it has been established that a child is behind (the others), it is necessary to take this child aside, to analyze his/her case, to examine how it is possible to explain for example that he/she makes little progress or that he/she always makes a certain type of errors. When one has grasped the apparent cause(s), one can search for the most promising methods to overcome the difficulty” (pp. 39-40, original version, my translation). Binet listed the following as possible sources of performance in school children that is below their estimated potential (Binet, 1911, pp. 40-41, original version, my translation):

1. The state of physical development
2. Illness (neoplasms, anemia, tuberculosis, neurasthenia, psychiatric disorders)
3. Sensory deficits, especially in vision and hearing
4. Inadequate intellectual development, lack of understanding, low intelligence
5. Memory deficit: child understands but does not retain information
6. Difficulty in understanding abstractions and generalities, in spite of having adequate practical intelligence for everyday life and manual work
7. Momentary disorientation, caused by environmental/social life changes
8. Pronounced apathy, laziness, deriving from a distaste for intellectual work
9. Instability of character in different forms
10. Lack of discipline, instability related to hostility toward the teacher
11. Family influences, failure of family to cooperate with school.

Although Binet’s list is surely incomplete, it is sufficiently broad and lengthy to demonstrate his insistence on examining individual differences among children before reaching premature diagnostic conclusions. It is precisely this kind of insistence on the importance of the ways in which individuals differ from each other that lead inexorably to the possibility and indeed the necessity of a dynamic approach to psychological and educational assessment.

*Process Assessment*. The idea that we should assess the processes by which individuals set about to learn or solve problems is a very old one, but one that has until fairly recently enjoyed only very modest operationalization. Binet (1911) suggested it a century ago, but then did little to show us how to do it. He did, however, present a broad outline for going about it. André Rey, in his classic 1934 paper (Rey, 1934), made great strides toward operationalizing the assessment of learning processes, but even then he was performing backward analyses, i.e., analyzing the error curves of different individuals who had been given his *Plateaux Test* for learning to remember a spatial sequence. Many researchers have attempted process assessment, with varying degrees of success. Here is a small example. In Susan Burns’s MA thesis (Burns, Haywood, & Delclos, 1987), she presented preschool children with designs that had to be constructed by the selection and sequential stacking of simple stencils, using an adaptation of the Grace Arthur Stencil Designs. During their work, she recorded their use of identifiable cognitive and metacognitive strategies, using a predetermined observational schedule, and found that the most successful problem solvers were those who made use of such strategies. She also found that children from socially and economically disadvantaged families were significantly less likely to employ identifiable cognitive strategies than were children from more privileged circumstances. Others study learning processes by a dynamic method, that is, by intervening and then observing the effects of their intervention. Still others vary the methods of scoring. An example of this latter approach is the work of Huberty and Cross (1988). These authors administered the Representational Stencil Design Test from Feuerstein’s Learning Propensity Assessment Device, and then scored the subjects’ responses either as simply correct or incorrect, or by the alternative method of giving credit for each stencil correctly placed whether or not the design was totally correct. Thus, they were able to tell the difference between absolute failure on given designs and partially correct solutions. David Tzuriel (2001) uses both all-or-nothing and partial scoring methods in his dynamic assessment of young children, and typically demonstrates that they yield different outcomes. The practice of giving credit for the correct parts of even incorrect responses can tell us how far below the threshold of correctness a subject’s solutions might be, thus suggesting how hard we are going to have to work to help that person to learn more effective problem solving. A different way to reach a similar conclusion is the graduated prompt procedure used often in research. All of these methods are to some extent indirect, although they bring to mind an important tactical principle in the physical sciences that actually underlies dynamic assessment itself. That principle says that an important way to learn about the characteristics of events that are not directly observable is to change those events and then to observe the effects of the changes. That is precisely what we do in systematic dynamic assessment. Even so, I have to observe that construction of methods for the direct study of learning processes is an area that is much in need of further work.

An important way in which we can extend the study of learning processes is to pay closer attention to what has already been learned through research with other primates. Following upon Harry Harlow’s (1949) introduction of the concept of *learning set* testing, Duane Rumbaugh introduced the *Transfer Index* (Rumbaugh, 1969, 1971) as a means of estimating the learning potential of primates and of making meaningful comparisons of their abilities across species, and subsequently the idea and technique of the *Mediation Paradigm*. In learning set testing, using the Wisconsin General Testing Apparatus (WGTA), an experimenter would present subjects, usually rhesus monkeys, with a series of novel two-choice discrimination problems, with the animals given six learning trials on each unique problem. In each problem one of two possible choices, e.g., the larger of the two, would be arbitrarily designated as positive, i.e., to be rewarded, whereas the other was not rewarded. After a large number of such unique six-trial problems, the subjects demonstrated a significantly enhanced performance on new learning problems. That is, they seemed to have learned to learn.

Tuttle’s description of Rumbaugh’s Transfer Index sounds convincingly like dynamic assessment: “Rumbaugh devised the transfer index in order to compare the complex learning skills of primates while minimizing perturbations from intertaxonal (and ontogenetic) differences in motivational, perceptual, and motor attributes of the subjects” (Tuttle, 1986, p. 184). He states further that “Transfer indices measure the capacity of reversal after holding constant the amount learned during the pre-reversal acquisition period in a series of two-choice discrimination problems” (1986, p. 184). Learning trials are given, then, after a criterion of learning has been reached the “correct” discrimination choice is reversed and acquisition of the reversed discrimination is assessed and recorded as a function of the efficiency of initial acquisition. The transfer index has been used as a research tool to study a wide variety of cognitive processes, including attention to cues in the visual field (Rumbaugh, Gill, & Wright, 1973), effects of early environmental privation (Davenport, Rogers, & Rumbaugh, 1973), and the learning processes used by “bright” and “dull” gorillas (Gill & Rumbaugh, 1974).

The *mediation paradigm* is a research method designed to permit inferences about subjects’ use of mediational or relational (as opposed to associative) learning strategies. It is an extension of the transfer index, but introduces an additional layer of complication in problem solving. After giving acquisition trials until the subjects have reached a strong criterion, e.g., 9/10 correct choices, where A is rewarded (“correct”) and B is not (“incorrect”), these definitions are then reversed on a single trial so that B is now rewarded and A is not. In a second group the reversed contingency is continued to a pre-set learning criterion. In a third group, after acquisition trials a new choice, C, is introduced to replace either A or B, and is then the rewarded choice. Subjects who have done only associative learning according to a classic Hullian mode make more errors on the reversal and novel-choice trials and show a negative relation between amount of original training and performance after reversal and/or introduction of the new choice. Those who have learned a *conceptual relation* at a higher level of abstraction than the mere association of stimuli or stimuli and responses make a very high number of correct choices on the test trials and show a positive relation between strength of original training and performance on test trials. This is reminiscent of Jensen’s (1973) Level I and Level II learning distinction. One wonders how these animals would perform on Raven’s Progressive Matrices!

The animal studies strongly suggest some ways in which we might engineer the circumstances of testing in dynamic ways. First, the use of automated testing apparatus allowed the subjects to work at their own pace and even to determine themselves when to work and when not to work, thus leaving important motivational aspects in the hands of the subjects. Second, pursuing a testing strategy to higher and higher levels of complexity and abstraction helped to identify abilities that were widely assumed to be absent or impossible. Third, the transfer strategy helped to pursue the goal of generalization of relational learning.

All of this suggests that we can indeed assess the very processes by which our subjects learn, but that doing so requires re-orientation of the questions we ask, the methods and materials we employ to answer those questions, and openness to alternative interpretations of the data we get from those investigations. Very promising strategies employed in this quest so far include direct observation of learning and problem solving as it takes place across different problems, comparison of the effectiveness of different kinds of “help,” use of a transfer paradigm, and use of a mediation paradigm as integral components of dynamic assessment.

*Learning Potential, Educability, and the Zone of Proximal Development*. I have combined these three concepts into a single categorical discussion in order to emphasize their commonality and to highlight the notion of trying to anticipate what could be possible, that is, the difference between what is and what could or might be. That idea has a rather long and complicated history. For most of the history of educational psychology and its predecessors, the emphasis has been more on anticipating what intellectual events would not or could not occur in the future rather than on what positive things might be possible. When the school board of the city of Paris called upon Binet to undertake the task of categorizing school children, the primary motive was to identify children who *could not* succeed in the typical school environment and curriculum. As we all know, that assignment led to the development of the Binet-Simon intelligence test, now known in its current incarnation as the *New Metric Scale of Intelligence* (*Nouvelle Échelle Métrique de l’Intelligence*; Zazzo, Gilly, & Verba-Rad, 1966) and in its American version as the *Stanford-Binet Intelligence Test* (Terman & Merrill, 1960).

When I was in university, we psychology students were forbidden to use the word “potential” or to entertain the concept seriously on the ground that potential was a very soft and weak idea whose existence could be neither measured nor demonstrated. Those of us who were specializing in clinical psychology were put on special notice against this soft-headed notion, obviously because we were the ones most likely to be taken in by its seductive powers. The prevailing dictum was “if it exists, it exists in some quantity; if it exists in some quantity it can be measured.” What marvelous confidence we had in our measurement skills! Of course, the parallel notion was that if it could not be measured then it did not exist. In spite of these proscriptions, the idea that what you see is not necessarily what you get continued to seduce clinicians and educators; that is, practitioners were infamous believers in the notion that a person’s “actual” or “real” abilities were not entirely reflected in any given sample of that person’s performance, whether it be on tests or in more real-life situations. Teachers have said famously to millions of laggardly students, “I know you can do better than that.” I recall a little informal study that I conducted 50 years ago. In a psychiatric hospital where I was working as a clinical psychologist I pulled from the files a large sample of reports of psychological examinations that had been conducted by staff psychologists and interns, and looked only for the relation between the intelligence test scores that they reported and the clinicians’ interpretations of those numbers. In almost three-quarters of the cases, the psychologists reported confidently that the scores under-represented the patients’ “actual” abilities. I concede that these numbers would be less impressive in a different setting, because it is a well-known observation that the acute onset of many psychiatric disorders tends to lower intellectual performance; thus, there was reason to believe that the clinicians’ interpretations might have had some validity. Still, the notion of undemonstrated potential was at worst a guess and at best a conclusion based on evidence that was hard to identify. Following that experience, some colleagues and I (Haywood & Moelis, 1963) studied the intelligence test scores of schizophrenic patients who had experienced measurable improvement in their psychotic symptoms and those who had not so improved. We found, to nobody’s great surprise, that the IQ losses that both sets of patients had sustained with the acute onset of their psychosis had undergone a differential fate: the “improved” patients had gained back most of the IQ points they had lost, whereas the unimproved patients showed no such recovery in IQ. I cite these examples not because I believe they had any great influence but simply as a way to demonstrate that the time was ripe for such modest discoveries. Indeed, similar work was going on in many places, much of which was unknown to us as we labored in the middle of the cornfields of the American midwest.

I Googled the term “learning potential” and got two hundred fifteen MILLION hits. To be sure, one could get a huge number of hits by just searching on the word “learning,” (765,000,000), so I tried “potential” by itself and got 541,000,000 hits. These numbers suggest the ubiquity of the notions of learning, potential, and learning potential. Of course one must distinguish between the *term* “learning potential” and the *concept* as it is understood in psychology and education. Let us try to examine the concept. In its broad usage, learning potential refers to implied or suspected ability to learn beyond the level that is being currently demonstrated. Understood in this way, it seems to have the following elements:

1. emphasis on learning effectiveness and/or efficiency,
2. ability that is not readily apparent, that is hidden,
3. the possibility of better learning under different conditions.

In addition to these obvious implications, the concept has some implicit assumptions that greatly influence its application. One such assumption is that there is a finite and identifiable number of events that are capable of masking one’s learning effectiveness and efficiency. That group of events has never been catalogued and we are still in the discovery phase in that regard. Let us recall Alfred Binet’s list of obstacles to good school performance. Here are some prominent ones that have been investigated in today’s world:

1. deficiencies in language development,
2. knowledge gaps; e.g., impoverished vocabulary, inadequate store of information,
3. inadequate development of basic cognitive processes, such as those that characterize the developmental stage of concrete operations.
4. cultural differences, especially those related to attitudes toward and approaches to learning,
5. cultural deficiencies, i.e., failure to have developed a strong cultural identity (often associated with transculturality, cultural transplantation)
6. ineffective motivation systems, such as emphasis on task-extrinsic sources of satisfaction and consequent failure to have developed a task-intrinsic motivational orientation,
7. negative self concept, especially as related to learning,
8. sub-optimal life experiences and/or opportunities; e.g., limited language elaboration in the home, little experiential variety or novelty,
9. poor teaching?

*Assessment of educability* is a fairly new approach, although both Binet (Binet & Henri, 1895) and André Rey (1934) addressed the concept directly rather a long time ago. The notion of “educability” has suffered a fate similar to that of “potential,” because of its presumed unmeasurability. It is curious that the concept of uneducability, or non-educability, has flourished, in spite of its equally unmeasurable quality. That is to say, psychologists, educators, pediatricians, and others have not been reluctant to diagnose people with obvious learning difficulties as being *unable* to receive the benefits of education. Within my own professional lifetime, persons with intellectual disabilities were officially classified as “educable mentally retarded,” “trainable mentally retarded,” and “untrainable mentally retarded.” The basis of that assessment was the psychometric assumption that **does** equals **can**, and that **does not** equals **cannot**. Obviously, some part of that assumption must be true: One does not do what one cannot do. The problem has been with the inverse assumption: Not doing something means that one cannot do it. How often have I heard my graduate students say, regarding a person’s test performance, “He could not get beyond the third block design.” I always had to correct them by saying, “You do not know what he could or could not do; you know only that he *did not* go beyond the third block design today, on this test, given this examiner and his present state of knowledge. The fact that he did not go beyond that must not be taken to mean that he could not do so under different conditions.” Performing poorly on the vocabulary subtest of an intelligence test has been taken to suggest that one has poor *ability* to learn in a verbal mode, generally speaking. What one has already learned or not learned is seen as an indication of that person’s ability to learn in the future, in other words, his or her educability. The obvious difficulties with that notion are at least three. The first is that it involves a negative assumption, which of course cannot be proved logically. The second problem is the obvious one, that a vocabulary test is not an adequate sample of “learning in a verbal mode.” The third is a more practical difficulty: It necessarily assumes that all other possibly influencing variables are equal for all persons or are inoperable in the given case. That assumption is so patently untenable as to be laughable—were it not for its extremely serious consequences. It does then follow that one can indeed assess educability, but doing so requires assessing the products of prior opportunities to learn (without even knowing what they have been), employing a broad and representative sample of the expected domain of learning, while holding constant all the other influencing variables. Doing that is logically possible but in any practical sense extraordinarily difficult, there being so many conditions that can influence what one has or has not already learned. It would also require controlling past events, such as differential opportunities to learn—obviously a superhuman undertaking. André Rey offered this example:

Suppose that someone shows us two dogs, one of which, following patient training, demonstrates a well-developed conditioned reflex, whereas the other, which has not gotten the same training, lacks the conditioned response. Suppose we are asked to estimate, on the basis of this single clue, which of the two animals is more intelligent, more developed, more normal; in short, which of the two exceeds the other with respect to the plasticity and quality of its neural organization.

On hearing this question many would smile, finding it absurd. Instead of making such a judgment, they would answer that the two dogs are not comparable and that one should not base an opinion on the mere presence or absence of an acquired characteristic. The first animal has adopted an accommodation; in that animal, certain of its organismic possibilities have been realized, whereas in the second animal, which might possess identical possibilities but has not been given the training, such an accommodation has not been reached. Thus, to compare the two animals under these conditions is as useless as comparing, from a growth point of view, a mature plant to its seed. Everyone would agree that such a comparison of growth would make sense, for these plants, only if we should examine the two plants at the same time, developing under identical conditions. Only under such circumstances would any differences between them be meaningful and usefully interpretable. (Rey, 1934, pp. 297-298, my translation)

If we cannot control those inter-individual variables, then something else must be added to the mix. That something else is observation of the very processes of learning itself, accomplished in actual conditions of new learning situations. In addition, in dynamic assessment of educability or learning potential, we neutralize as many as possible of those circumstances that could mislead us, for example, impoverished vocabulary, failure to understand the test instructions, sensory deficits, and even inadequate development of basic cognitive processes and habits, usually by teaching within the test.

Vygotsky’s (1929, 1974) introduction of the idea of a *zone of proximal development* pointed the way for systematic assessment of educability and/or learning potential. ZPD was a consequence of Vygotsky’s cultural-historical perspective on the development of human cognition. Vygotsky’s own words (translated from Russian, not by me!) best describe this contribution:

Having found that the mental age of two children was, let us say, eight, we gave each of them harder problems than he could manage on his own and provided some slight assistance: the first step in a solution, a leading question, or some other form of help. We discovered that one child could, in cooperation, solve problems designed for twelve-year-olds, while the other could not go beyond problems intended for nine-year-olds. The discrepancy between a child’s actual mental age and the level he reaches in solving problems with assistance indicates the zone of his proximal development; in our example, this zone is four for the first child and one for the second. Can we truly say that their mental development is the same? Experience has shown that the child with the larger zone of proximal development (ZPD) will do much better in school. (Vygotsky, 1986/1934, pp. 186-187)

Vygotsky was a developmentalist; that is, he tended to see events in the lives of persons as episodes in their personal development rather than as static indicators of their permanent ability or character. Thus, in describing the ZPD he suggested that it constituted a window on the future development of the child. The idea that it is possible to estimate the difference between what now is and what will, might, or could be in the future lies behind the subsequent development of the concept—and assessment—of learning potential/educability. Thanks to Vygotsky and the zone of proximal development, we were on our way to being able to quantify our estimates!

It is important to note that in Vygotsky’s example both children improved their problem-solving performance. Thus, the diagnostic question is not *whether* the child has learning potential or does not have learning potential. The implication is that everybody typically functions at considerably less that his/her capacity; therefore, there is room for improvement in everybody’s performance.

The notion of the zone of proximal development came out of a cultural-historical view of human development, with a considerable emphasis on cognitive development. That is an important observation because it reminds us that Vygotsky was working from a developmental perspective, that he viewed cognitive development as a dynamic phenomenon with very interesting changes taking place both as a function of maturation and as a reflection of sequential life experiences. Finally, it reminds us of the enormous influence of cultural variables on the cognitive development of individuals. This cultural emphasis was later to be taken by Feuerstein and incorporated in expanded form in his theory of structural cognitive modifiability.

It is further important to note that Vygotsky did not specify in any detail the nature of the assistance that was to be provided to children in the assessment of their ZPD. In his examples, the help seemed to be in the nature of clues to the correct procedure or an indication of a sequence to be followed in solving the problems. The necessity to identify the nature of the intervention leads us to discussion of the next foundational idea.

*Mediation* refers to a very special kind of interaction between a learner/performer and a more cognitively competent person; i.e., between a child and an adult, or a child and an older sibling or a peer. Whereas Reuven Feuerstein has pioneered in the development and elaboration of dynamic assessment in many ways, his unique contribution lies in his specification of mediated learning experience as the special quality of interaction that promotes generalized learning (e.g., Feuerstein & Rand, 1974). In other words, Feuerstein has specified in detail the nature of a style of interaction between examiners and examinees that is critical to the dynamic assessment process. Of course, there are other interactive styles that others have found to be useful in dynamic assessment. As usual, the purpose of the interaction dictates, to a significant degree, the nature of the interaction.

The nuclear idea in mediated learning is the interposition of a helper between a learner (or examinee) and the problem that must be solved or the material that must be learned. That idea is a universal one, cutting across all known approaches to dynamic assessment. The unique character of mediated learning approaches lies in specifying exactly what content is to be mediated to learners. In order to accomplish that specification, we must ask what the goals of DA are. In the case of Feuersteinian approaches, they include at least the following:

1. To discover obstacles to effective performance
2. To neutralize those obstacles whenever possible
3. To assess the effects of “obstacle removal” on subsequent performance on the same or similar tasks

The essential content of the mediation follows directly from these goals. First, they are broad goals because obstacles to effective performance come in many shapes and sizes, including knowledge deficiencies, cognitive developmental deficiencies, environmental or situational variables, and personal and behavioral variables. Thus, in order to unmask hidden or even unsuspected potential one must be prepared to deal with all of these sorts of obstacles. Even so, the core problem is frequently lack of adequate development of very basic “cognitive functions” (as Feuerstein refers to fundamental and generalizable logic processes). The first few minutes of a mediational dynamic assessment might well be spent in the mediation of some behavioral controls, as both André Rey and Alfred Binet suggested, as well as efforts to stimulate the motivation to engage in problem solving and learning. Additional time might be spent assessing a subject’s level of prior knowledge, such as language mastery and vocabulary. After that initial investment, the mediator’s focus is usually more sharply on strictly cognitive developmental variables, such as defining the problem, engaging in comparative and classificatory thinking, establishing a sequence of problem solving behavior, pulling prior knowledge out of one’s store of knowledge and focusing it on the present problem or task. I recommend a special issue of the *Journal of Cognitive Education and Psychology* that was devoted to different theorists’ concepts of the nature of the mediational processes, including those of Feuerstein, Magne Nyborg, and the neo-Piagetians (*Journal of Cognitive Education and Psychology*, 2003) for a more detailed consideration of mediation and its role in dynamic assessment. It should hardly be necessary to point out that the content and focus of whatever teaching or intervention takes place as part of dynamic assessment is of critical importance for the possible outcomes, including most prominently the extent to which dynamic assessment can actually lead to estimation of learning potential or educability.

*The Cumulative Progress of Dynamic Assessment*. Although I have not presented these foundational ideas in precise chronological order, it seems clear to me that their development has been necessarily sequential, a pattern that is usually true throughout the scientific enterprise. That is to say, “new” ideas are invariably built upon a base of prior thought and prior accomplishment. In the present case, I suggest that the basic idea upon which everything rests is that of individual differences, that is, the notion that individuals differ from each other in interesting and important ways and that their differences make a quite proper and profitable focus for scientific inquiry. It follows, then, that attempts to apply general laws of behavior and human development to individual cases must lead to errors. In spite of my having been raised on the dictum that “science is not interested in the unique event,” I must say now, “well, too bad for science,” because when it comes to the study of individual differences among persons it is often unique characteristics that reveal the most important information. Thus, an idiographic approach makes dynamic assessment a useful enterprise.

The second idea in this hierarchy is that of process assessment. It should be clear that if we are to observe, record, and generalize from the ways in which different individuals approach problem solving and learning, we must believe *a priori* that such differences are important.

The third idea, that of learning potential or educability, derives from both of the first two, as a natural product of individual differences and process assessment. In a sense, learning potential is the inferential goal of its predecessors.

Of course, we have had to ask *how* one goes about intervening in the learning process in order to infer learning potential. At that point we come to a *carrefours* as the French say, that is, a crossroads that may have a number of roads leading in different directions. The particular method of intervention that one chooses is an outgrowth of one’s goals in assessment. The method that I have focused on today is mediation, especially mediation of basic modes of logical thinking.

Being a cumulative enterprise, it is a good idea to ask where we go from here. I cannot exactly predict the next breakthroughs, but I can assure you that dynamic assessment both as a concept and as a practice remains in need of substantial further development. As I have suggested today, one area whose need for further developments is obvious is process assessment. Both direct observation of the ways individuals approach learning tasks and indirect, inferential methods based on deliberate attempts to produce change in that which we are assessing must undergo more intensive study and development of research and clinical methods. Another area of critical need is the bridge between learning potential assessment and classroom or clinic instruction. Yet another is the relation of dynamic methods of assessment to more traditional psychometrics, the relation of dynamic to static assessment, and the accompanying problems of reliability and validity. Significant progress has already been made, but there is plenty of room for further creativity.

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