

## CHAPTER 22

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# A CULTURE AND ITS REPRESENTATIVES

**David C. Berliner**  
***Arizona State University***

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Vygotsky got it right. Everything intra-psychic is some transformation and representation of what was learned from participation in the social systems of which we are a part. I started at the Stanford University School of Education in Summer of 1964 and, unaware and unprepared, I found myself in an environment that exerted a powerful socializing effect on me. It didn't affect everyone the same way, but at Stanford I entered a culture I had not encountered before, nor had I even imagined its existence, and it changed me. The mentoring and friendship I received from natives of that culture, particularly by two of its most distinguished faculty, taught me what it meant to be an academic. Though they were nothing but encouraging throughout my surprisingly successful career, I continually feel I cannot live up to the standards set by them and the culture that they represented.

One learns to pass as a native quickly in a foreign culture, or perish. I arrived at Stanford with a wife and two children, and enough funds for about 4 weeks. I was nervous about my ability to compete as an educational psychologist, barely knowing what that field was and what it is that one did as an educational psychologist. At that time Stanford was arguably number

one in psychology and in education, and that contributed to my feelings of inadequacy. The money problems subsided when I quickly landed a research assistants' job with the National Longitudinal Study of Mathematics Ability (NLSMA). That was part of the "New Math" curriculum reform led by Edward Beagle, and it employed such notable future scholars of mathematics education as Jeremy Kilpatrick, Thomas Romberg, and James Wilson. They were talented enough to scare me even more during those first weeks at Stanford. My boss on the project eventually became my closest friend, the remarkable Leonard Cahen, who seemed to intuitively grasp research and evaluation in ways I have never be able to match. He too initially added to my anxiety. But my first Stanford course moved me from merely anxious to completely terrified! That was a course on Social Foundations of Education with then dean I. James Quillan. We had a paper due early in the course, about the third week, and another due at the end of the course, the twelfth week. The teaching assistant for the course was the now distinguished policy analyst James Guthrie, who served most of his career at UC Berkeley and is now a professor at Vanderbilt University. I was called to the deans' office after my first paper because the assistant and the dean needed to inform me that my writing was unacceptable. In their judgment my paper was awful. They informed me that my work was not up to the standards they expected of a Stanford Ph. D. My worst fears were realized when the dean informed me I was in danger of flunking out of Stanford.

Nine weeks later I was again called to the deans' office, sure that my nascent career had ended. Instead the dean told me that my second paper was excellent, both well-written and creative, and if I'd like to get it published he could help me do that. Moreover, if I wanted to work with him on that topic he thought we might be able to co-author work in that area. Terror certainly motivates student learning, though it probably is not to be recommended for every student. But terror did help me go from a potential failure to a successful student in 9 weeks.

I learned quickly that I was in a culture that depended on the written word and thus I had to get used to communicating my thoughts in ways that the culture valued. I never became a terrific writer, but I have won some writing awards of which I am proud. I thank Stanford's culture in general, and Dean Quillan in particular, for scaring me into learning how to write passably. What Stanford taught me is not at all mysterious. Revise everything you write a few times, and then, when you think it ready, have an editor go over it (your spouse if you have a strong marriage!) in order to point out all the additional places where you were a long way from perfect in your thinking and mechanics.

Once I thought I could survive, and had this belief validated by the faculty, Stanford became an intellectual feast. Lee J. Cronbach and N. L. Gage were the newest educational psychologists in the program, but we studied

psychology also with Richard Atkinson, Albert Bandura, William Estes, Jack Hilgard, Quinn McNemar, and Patrick Suppes, to name a few of the better known of the psychology faculty. Individually and collectively the Stanford psychologists and educators had an impact not just on the knowledge acquired from their teaching, but much more importantly, I think, they communicated the habits of mind to help me understand my discipline in ways that were both subtle and powerful. In abundance at that time, and in that place, were first-rate thinkers in psychology and education. From such distinguished faculty students learn many things that never make it into the textbooks. It's the stuff not easily written about; the tacit knowledge that makes one a professional within a discipline. The amount of this tacit knowledge distinguishes experts from novices, and the most articulate of these experts can help make the tacit explicit. In the Stanford environment I had experiences with experts like that.

The best teachers help you to learn their habits of mind. You learn how to frame problems, such as the problems inherent in studying teaching. You learn their views on the nature of science in the social sciences. Through them you discover the weakness of science and the power of politics to affect evaluation. Or you might learn the reasons that criticism is so important in the sciences. You learn to do research, of course, as in most educational psychology doctoral programs, but at Stanford I learned also the etiquette and ethics for the conduct of research, and its reporting. I was asked to craft research reports in my first year; I designed experiments, ran subjects, and wrote reports on micro-teaching in my second year, resulting in an AERA paper that year; I wrote ancillary materials for Fredrick McDonalds' well respected educational psychology text; and I worked as an assistant on one of the first reports of the National Academy of Education. Each of these apprenticeships was a setting for learning about a scholars' life. Each job provided the chance to acquire the tacit knowledge and normative behavior that must necessarily guide research. Stanford provided a powerful culture that I wanted to identify with, and so I allowed it to exert a good deal of influence on my life. But two of that culture's representatives, Lee J. Cronbach and Nathaniel L. Gage, were particularly influential in shaping my professional life.

An incident with Cronbach exemplifies the man and his dedication to teaching and his students. In a course on human abilities he was explaining the variance-covariance matrix and that prompted me to ask a question. I said " Dr. Cronbach, I see correlation, I have a scatterplot in mind when I think about that concept. And I can see variance. I can visualize how the deviations from the mean form and grow. Is there a way you can show covariance visually?"

Cronbach stared at me in silence before the class. He stared and stared, and as time went on I broke into a sweat. He continued to stare and stay

silent still longer, and by this time the whole class was in a sweat! Many of us thought, I learned later, that he had a seizure. None of us knew what was going on or quite what to do as we all sat, distressed and silent. Finally, after what seemed an eternity to us all, he said, “No” and continued on just as if nothing had happened. We all let out a collective sigh of relief. But that is not the end of the story.

A few months after this incident I was passing his office in Cubberly Hall, at Stanford, and said “hi.” He said “David, come in here. Sit down.” He then went to his black board and began sketching things out on the board and uttering what I first believed to be incantations and chants. I never did understand fully what he was saying to me. But when he was done, he looked at me like a little kid, all pleased with himself, and I realized that he had just informed me that what he had drawn was a picture of covariance. I had trouble remembering that I had even asked that question, but he had spent the ensuing three months worrying about it.

I cannot draw it for anyone, as I didn’t take notes. I am afraid that like Fermat’s theorem, this visual representation will remain lost because I was too startled and too unprepared to remember it. But what I do remember is that this incident defined, in part, what it means to be a great teacher. You must take your students seriously. And if you don’t know the answers to their questions you have to go get them. Although not all of my cohort felt as I did, I found that this respect for students permeated the Stanford culture. Another example that makes this point clear comes from an encounter with Quinn McNemar. McNemar was a great statistician of an earlier era, a former president of the APA. On a day I remember well I had just completed my final examination in his statistics course. I was satisfied enough with my performance that I turned it in, even though I knew I had some problems with certain items. I went out to the hall to wait for my friends to finish. Many of them were sweating over the test, competing for the highest grade, but I had done the best I could and so I simply relaxed. As I sat waiting and watching the stressed students still in the class, Professor McNemar came over to me and asked me what I thought of the test. I told him that I thought the test was fair, and that I thought I did alright on it, but “I simply could not answer the Chi-Square problem at all.” I told him that I had tried and tried, but I just couldn’t come up with any way for solving it so I finally left it blank. He chuckled and said yes, that was a tough one all right, he had been working on it for a few years and he couldn’t solve it either!

As I thought of my own struggle a few minutes earlier, and looked at my sweating colleagues, I thought Quinn McNemar the cruelest person in the world. But when I questioned him he explained himself. He said he put that item on the test because he thought that under the pressure of the test some smart student might crack the paradox that the problem presented. It turned out that it was not cruelty that motivated him at all. Instead, he

put this apparently intractable problem on the test out of his genuine respect for the intellects of his students. I do not recommend this technique to anyone reading these memories of my graduate school experience. But, it is illustrative of what I found. With few exceptions, I found that Stanford professors, certainly among the busiest psychologists and educators in the world, genuinely respected their students' intellects, questions, and contributions to research.

### **LEE J. CRONBACH AND N. L. GAGE: EXTRAORDINARY ROLE MODELS**

Cronbach and Gage had worked together at the University of Illinois, and came to Stanford at about the same time. They eventually logged over 50 years of work on the same faculties, and early in their careers they did some joint research. As Cronbach's biography notes, he and Gage eventually decided to split the world—he would do psychometrics and Gage would do research on teaching. I had the honor (and difficulty) of working as Cronbach's research assistant for one year of my graduate training. My job was officially 20 hours a week but I had to work 40 hours to keep up with what I was given to do, and also so as not to look too ignorant in Cronbach's eyes. Every time we did something and I thought it was great, Lee tore it up and revised it again. He respected my opinions which made me feel wonderful. But it was he who had the high standards and creativity to always say about both my work and his own, "lets try this instead." Revision was a constant, and so his writing was always remarkably lucid. He sent me to libraries, to do interviews, to follow him around at meetings, all while he and Patrick Suppes worked on the book *Research for Tomorrow's Schools*. This was the first book put out by the National Academy of Education, on whose board of directors I now proudly serve. Cronbach had me do meticulous referencing and quote checking, modeling perfectly the scientists obligations to be clear in thought, parsimonious in writing, and meticulous in referencing. Standards few of our colleagues and I reach as frequently as did Cronbach.

Cronbach was one of the Terman gifted, with a childhood IQ that was off-the-charts. It was clear to me in working with him that there was absolutely no diminution of that IQ in his adult days. Every one who knew him appreciated that his mind was both quick and quirky. Being around him was being in a room charged with intellectual energy focused on solving educational problems and communicating well-warranted ideas.

Although he was perceived by many to be "cold," and occasionally was rude to faculty and students, there was a human side to Cronbach, as well. He found time to visit me when I had a hospital emergency—the only fac-

ulty member to do so—and always treated me in an avuncular way. He also treated warmly a young colleague whom he admired greatly, Richard E. Snow, who became my dear friend during this time period. Snow was a master at “psychologizing,” that is, thinking through the *psychological* meaning of aptitude and instructional environments as we all tried to design aptitude-treatment-interaction (ATI) studies. Dick Snow was also a part of this powerful environment, a *learning community* in today’s parlance, and he was also one of the warmest and wisest psychologists I ever met. The modeling by Cronbach and Snow in particular, shaped the kinds of educational psychologists that came through Stanford’s program at that time. I feel lucky to have been there at that time.

I knew N. L. Gage slightly while at Stanford. I had a course with him and worked on projects related to those he worked on in the Stanford Center for the Study of Teaching. But I was not close to him. On graduation I left Stanford to work for Dwight Allen, a Stanford professor that had just become dean of education at the University of Massachusetts. Dwight was a prolific generator of ideas and an exciting person to be around, still exercising a fertile mind as a distinguished professor at Old Dominion University in Virginia. But the match of my family with New England, in the tumultuous years of the late 60s, didn’t work out well. I began to negotiate for a job back in the San Francisco Bay area, and as I was doing so Nate Gage, on Dick Snow’s recommendation, asked me to co-author an educational psychology text. The Stanford culture of which I was a part provided me this wonderful opportunity to work with one of the finest scholars in the social sciences. His is a lasting influence on me, for as I write this review of individuals that shaped my life, N. L. Gage is just over 90 years of age and still working on his magnum opus, a book on a theory of teaching. On most mornings he is in his office at 10am, and he leaves at four. The scholar in winter, for sure, but a scholar still in fine form.

Gage influenced me more than any other scholar since we were writing together frequently for 25 years. An example of the man and his values are found in the following story. In the early 1990s I had been a respondent at an APA convention where all the other panelists criticized the schools. I had been doing a great deal of research in schools and classrooms around that time and shared my observations with the panelists and the audience. I said that America’s students were actually doing fine, that our teachers were remarkably able and humane, and that the book “A nation at risk,” published a few years earlier, was bull! Nate Gage was in the audience that day and immediately after the session came up to me and asked if I had the data to back up what I said. I replied that the data were all around if any one wanted to look for it, but it seemed that people would rather just spout off and blame the schools, instead. Gage looked me squarely in the eye and said, with a touch of sadness about my errant behavior, “David, you need

data if you are going to say things like that.” N. L. Gage did not want to hear arguments *ex cathedra*, or anecdotes from a frequent visitor to the schools. Gage is a data man!

I thought a lot about his comment over the next few days, and decided to do what he wanted. So I went out to look for the data. This resulted in a speech I gave a few months later that changed my life. I challenged the lies and distortions that had been told by Reagan era media darlings such as William Bennett, and I tore into the distortions about the productivity of the schools put out by the business community, all dutifully reported by an ignorant media. My wife, on whom I inflicted the paper the day before I was to give it, predicted that this speech would result in a change in my career. I delivered the talk and received a wild, standing ovation from a group of educators, and as predicted by my wife, my career changed. I drifted away from traditional educational psychology into policy work, particularly after writing the best selling book “the manufactured crisis” with the morally outraged, indefatigable and impeccable scholar Bruce Biddle as my coauthor. But it was N. L. Gage, as my friend and colleague, and as a representative of that Stanford culture, who pushed me to “get the data.”

I had started working with Gage some 20 years before the incident I just recounted. During the first 5 years of that relationship, from 1970–1975, we met virtually every Friday and Saturday. They were great years as we crafted our educational psychology text and talked of many things personal and private, as well as those of a professional nature. A hundred little things Gage things did as a scholar shaped me. For example, early in our writing relationship Nate bet me a nickel that a long quote I had for our book was wrong. I took that bet, sure that I would win. But, after checking the quote I paid up my nickel. Most long quotes are copied wrong, although it may only be a comma left out or a comma inserted where it didn’t belong, or it might be a phrase or sentence garbled just a bit. But the chances for getting quotes wrong were high! Gage never got them wrong and he taught me to watch out for this common error.

He has a remarkable memory for dates and events, and could tell me in exquisite detail the day he met his beloved Maggie, as well as every detail about the people and the events at the meeting that launched the first *Handbook of Research on Teaching*. That was no mere publication, but an intellectual event that launched that very active field of research on teaching within educational psychology. His handbook was not just beautifully edited mechanically because Gage is one of the clearest and parsimonious writers in our field, but it is also brilliantly edited social science reviews. Nate’s ability to conceptualize the structure of our field, and to articulate what it needed in order to be both scientifically credible and useful were on display in that first handbook, and always on display for me, as we worked together. His social science knowledge, methodological sophistication, and

his encyclopedic knowledge of all the details of all the important studies in research on teaching pushed the idea that it was possible to obtain warranted assertability in the area of research on teaching. His faith that we could create a scientific basis for the art of teaching drove a whole generation of scholars, including me, to attempt that in a field that barely existed until the Gage *Handbook* came out. N. L. Gage's influence is on an entire field of study and along the way, on a host of educational psychologists who trained at Stanford and began their distinguished careers under his influence.

## CONCLUSION

I was blessed by the chance discovery of a great institutional home for learning how to be a member of a profession I have loved. My experience at Stanford taught me a lesson that relates to training teachers, or to physicians and those in the hospitality industry, as well. What I learned was that individual teachers matter, but so does the culture of the institute doing the training. Powerful learning environments, now so often studied by our European colleagues, are cultural, not individual, creations. In powerful learning environments there is consistency in the messages sent by the instructors who are representatives of the culture. The subtle messages communicated about what is acceptable behavior, what constitutes excellence, how criticism is framed, how to do a review, and so forth, constitute the hidden curriculum of the training institute, and it is as powerful as the more formal curricula to which students are exposed. Though I am not sure how one goes about it, I believe that each of us in a school of education or department of psychology should attend as much to culture building across divisions and departments, as we do to our own courses and syllabus design.

Two of the most famous representatives of the Stanford culture gave me encouragement and shaped my values. Not a day goes by but that I am grateful to N. L. Gage for his unwavering belief that reliable knowledge can be obtained through research on teaching, and that such hard won knowledge can be communicated in such a way as to be useful to teachers. His faith influenced my career. Somewhere along way, however, Cronbach lost that faith. Cronbach argued that social science findings are quite limited. He asserted that the real world is one with myriad interactions, thus limiting the ecological and population generalizability of all but the simplest psychological and educational knowledge.

From both of them I received well-reasoned arguments about why I should have faith in psychological and educational research, and also why I should not. I honor them both by alternating between doing research of



the type that Gage would admire (I hope), and doing policy and political work, which Cronbach saw as the more likely way to change the educational system. Gage sits on one shoulder, Cronbach on the other, but both admonish me to be the clearest thinker and most lucid writer I can be.

