Anti-Colonialist Antinomies in a Biology Lesson: A Sonata-Form Case Study of Cultural Conflict in a Science Classroom

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ABSTRACT

This case study illustrates and analyzes the tension an ESL science teacher encountered when his science curriculum came into conflict with the religious and cosmological beliefs of one of his Hmong immigrant students. A Hmong immigrant himself, the teacher believes the science he is teaching is important for all his students to learn. He also understands how his science curriculum can be one part of an array of cultural forces that are adversely affecting the Hmong community. The case study examines this tension, but does not resolve it. Instead, the study explores the knowledge the teacher draws upon to respond to the tension in a caring and constructive manner. This knowledge includes the teacher’s understanding of science and pedagogy. It also includes his understanding of Hmong history, which enables him to hear what his science curriculum means to one of his students. The case study concludes that teachers need some knowledge of the history of students’ specific cultural groups in order to teach science well to all students. This case study was one of seven produced by the Fresno Science Education Equity Teacher Research Project. It uses a special format, a “sonata-form case study,” to highlight tensions between specific curricular imperatives and meeting broader student needs. The study is based on real experiences, and employs composite characters and fictionalized dialogue to make its conceptual point. A theoretical preface explaining the methods of research and the modes of representation used in the Fresno Project is included.

THEORETICAL PREFACE

The following case study offers a variation on contemporary approaches to researching and representing teachers’ practical knowledge about their
Over the last two decades, a body of empirical and philosophical scholarship has emerged making the case that (1) some significant portion of teacher knowledge is narrative in form (Clandinin & Connelly, 1996; Connelly & Clandinin, 1999; Zeichner, 1998); (2) this knowledge is best documented by or in collaboration with teachers (Darling-Hammond, 1996; Cochran-Smith, 1993, 1999; Richardson, 1994); and (3) researchers need to employ narrative modes of representation in order to adequately capture the “wisdom of teaching practice” (Shulman, 1987; Donmoyer, 1997; Eisner, 1995, 1997; Barone, 1990). This case study builds on all three of these developments. Of particular importance for this study is Jean Clandinin’s and Michael Connelly’s (1996, 1999) notion of personal practical knowledge and their documentation of the way teachers actively build their understanding of teaching through the use of public, private, and sacred stories.

Many current efforts to document teacher knowledge focus on insights already possessed by some practitioners, but that are in need of greater circulation. Shulman writes:

Practitioners simply know a great deal that they have never even tried to articulate. A major portion of the educational agenda for the coming decades will be to collect, collate, and interpret the practical knowledge of teachers. (Shulman, 1987, p. 8)

We seek to extend the scope of the project Shulman describes. There is an implication to a narrative conception of teacher knowledge that is not addressed by efforts to describe already existing teacher insights. If we believe some teacher knowledge exists in the form of stories, then analyzing the stories already shaping teacher practice is only one part of a spectrum of possible research agendas. Another, equally important undertaking would be finding ways to produce new stories that could better shape teaching practice. Unless we believe all the narrative understanding of teaching we could possibly need is already in existence, research that generates new narrative understandings is justified.

The need for research that generates new narrative understandings is especially acute when considering aspects of teaching influenced by hegemonic patterns of thinking in our society (Gramsci, 2000; Freire, 1998; Fine, 1993; Liston & Zeichner, 1996). If our conception of the curriculum is adversely influenced by an ideology so pervasive that few if any practitioners may be thinking outside of it, then looking only to existing practices for wisdom will simply reproduce that hegemony. Given these conditions, narrative research would be needed that generates new counterhegemonic understanding of teaching practice. The case study that follows deals with one example of this type of hegemonic thinking—the widespread belief that scientific knowledge transcends culture and therefore science teachers do not need to think about the implications of cultural diversity for their curriculum.
A Means for Generating New Narrative Understanding of Teaching Practice

The work of Marilyn Cochran-Smith and Susan Lytle (1993, 1999) provides a conceptual framework for thinking about the generation of new personal practical teacher knowledge. Cochran-Smith and Lytle argue that it is not documentation and circulation of specific insights that is most needed, but rather the cultivation of an inquiring stance in teachers (Cochran-Smith, 1999). Such a stance would permit teachers to refine and extend existing insights based on their own experiences, reflections, and participation within a community of inquiry. This kind of inquiry would, presumably, help teachers develop both paradigmatic and narrative forms (Bruner, 1985) of local knowledge (Cochran-Smith & Lytle, 1993) that could enhance their teaching.

In her presidential address to the American Educational Research Association, Linda Darling-Hammond (1996) cited the need for practitioner inquiry that developed new ways to address educational inequality. Asking how we might meet the challenge of simultaneously serving traditionally marginalized groups of students and maintaining high standards, she wrote:

[The] answers rest in part, I believe, on our growing ability to produce knowledge for and with educators and policy makers in ways that provide a foundation for a more complex form of teaching practice, one that attends simultaneously to students and their diverse needs on the one hand and to the demands of more challenging subject matter standards on the other. (Darling-Hammond, 1996, p. 8)

The case study that follows was produced as part of a collaborative teacher inquiry project that takes up Darling-Hammond’s challenge. The Fresno Science Education Equity Teacher Research Project (Fresno Project) involved 10 science teachers, two administrators, and one university researcher. This group spent a year discussing their science teaching practice as it related to issues of race, class, culture, language, and educational equity in their community. The teachers identified a moment of their practice in which their desire to promote educational equity came into tension with their subject matter teaching goals. They reflected on the meaning of the moment as they experienced it—including the personal biographical sources of their understanding of it. They also reflected on other possible interpretations of that moment in light of the research group’s discussions and readings. Participants arrived at what one teacher-researcher described as a “new, more complex understanding of what was happening right in front of me.”

The Fresno Project departed from Cochran-Smith and Lytle’s model of teacher inquiry in that it retained a Shulmanesque commitment to producing a written product. Critical inquiry into teaching practice, we
believe, can be aided by written products like case studies. Therefore, the teachers, in collaboration with the university researcher, sought to produce a narrative representation of the professional knowledge landscapes (Clandinin & Connelly, 1995) associated with promoting equity in their science classes.

Because the teachers’ understanding of these landscapes had been transformed by the research process itself, and because it is the new understandings that we wanted to document and share, the goal of the case studies could not be a phenomenological description of their experience as it actually happened. The writing phase of the Fresno Project instead involved developing stories that explored possibilities for meaning within a teacher’s experience that was revealed only in subsequent reflection and discussion. In other words, the resulting case studies are partially fictionalized, in that they present a narrative account of their experience informed by these subsequent reflections and input from others. To highlight this fact, the name of the main character was changed.

We believe this shift from describing actual meanings to describing possible meanings is justified. Its aim is to produce a kind of scholarly speculation that remains accessible and germane to teachers’ personal practical experience. To put it in the terms used by Clandinin and Connelly (Clandinin & Connelly, 1995; Connelly & Clandinin, 1999), this research seeks to offer new public, private, and sacred stories about teaching practice that we hope can support and sustain more culturally responsive forms of science teaching practice. Nel Noddings, writing about the use of narrative representations in social sciences, defended this approach to research.

Every researcher should be honest about the status of his or her work as report, philosophical fiction, or speculation. But if the confessed purpose of a narrative is to encourage readers to “try looking at it in this way,” the truth of the account may not be of primary importance. (Noddings, 1995, p. 130).

Science Education and Cultural Difference

In addition to extending the conversation about ways to represent teachers’ practical knowledge, the case study that follows builds on a growing body of literature that examines the relationship between student culture and the science curriculum. In the pages of *Science Education*, William Cobern recently called for an expansion of our conception of the knowledge that enables competent science teaching to include student “world-views”. He writes:

it is important for science educators to understand the fundamental, culturally based beliefs about the world that students bring to class, and how these beliefs are supported by students’ cultures; because science education is successful only to the
This push for a conceptual expansion of science teacher knowledge is being motivated and supported by an increasing number of empirical studies. Nancy J. Allen and Frank C. Crawley (1998) have identified the conflicts between the cultural base of the science curriculum and the worldviews of Kickapoo Native-American students. Anagayuqaq Oscar Kawagley, Delena Norris-Tull, and Roger Norris-Tull (1998) have documented the tension between the science curriculum and indigenous worldviews of the Yupiaq. Okhee Lee (1999), taking a different approach, examined the way student worldviews influenced their ability to arrive at a scientific understanding of natural disasters that had affected them. Zachary Sconiers and Jerry Rosiek (2000) have written about the relationship between inquiry-based science curriculum and the distrust African-American students sometimes feel with regard to the schooling institution. Dawn Sutherland (2002) has examined the effect of culture and language on students’ perceptions of the nature of science.

The case study below contributes to this ongoing investigation of the connections between student worldviews and the cultural and ideological dimensions of the science curriculum. It offers a close examination of the epistemological, ontological, and ideological conflict between a Hmong worldview and the broad cultural worldview of which a high school science curriculum is a part. Furthermore, it explores a new mode of representing teachers’ practical knowledge about cultural conflict in the science classroom: the sonata-form case study (Sconiers & Rosiek, 2001).

The Sonata-Form Case Study

We refer to the narratives produced in the Fresno Project as “case studies” because they have a specific subject matter focus and a specific theoretical point to make (per Lee Shulman’s definition of a case study, cited in Eisner, 1998, p. 207). The case study that follows tells a story about a teacher’s reflection on his science curriculum and its relation to global processes of colonization and cultural genocide. The main characters represent real people and the major events of the story actually happened. The dialogue, internal monologues, settings, and chronology have been crafted to emphasize a tension between the curricular and moral imperatives that is the focus of the case study. On the one hand is the teacher’s felt need to teach the scientific truth about cellular biology and the causes of cancer. On the other hand is the teacher’s desire to avoid complicity with the oppression the Hmong community has suffered from majority cultures on
both sides of the Pacific Ocean. The narrative seeks to bring these competing imperatives into a conceptual tension, creating an aporia that is intended to induce a deeper level of reflection on science teaching practice in the reader—something similar to what Clandinin and Connelly have called “wakefulness” (Clandinin & Connelly, 2000, p. 185), but with a specific curricular focus.

We call the specific format of the narrative a “sonata-form case study” (Sconiers & Rosiek, 2000, p. 89), which has the following distinctive features.

1. It opens with a classroom episode that sets a tone for the rest of the story.
2. A description follows of a classroom activity that illustrates the teacher’s instructional philosophy and intentions.
3. A situation is reported upon in which those instructional intentions come into conflict with a student’s life experiences.
4. The teacher’s intellectual and emotional response to this tension is described.
5. A step back is made from the immediate situation to reflect on the teacher’s understanding of the tension encountered. This often involves extensive biographical reflection on the sources of the teacher’s insight (or lack of insight) about students’ lives.
6. The narrative returns to the episode of teaching in which the original conflict was introduced. Its meaning is now changed by the exploration of student experiences, teacher biographies, and sociocultural context in which the moment is nested.
7. The story ends, not with a resolution, but with an open-ended commentary on this new understanding of the relation between science teaching and students’ cultural, linguistic, and/or class experience.

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THE CASE STUDY

The case study that follows is told in the first-person voice of a teacher named Michael Chang. This character is based closely on the experiences of one of this article’s authors, Paokong John Chang.

Standing on the Threshold

I stand outside the classroom, bearing witness to the throng in the hallway, the shouts, the slamming lockers, the smell of excessive perfume. I greet students personally as they enter my room for the first time. Some pass through the door hesitantly, others excitedly, waving to friends. The
doorway marks a transition for most students from the freedom of summer to the regimentation of fall. For some immigrant children it also marks a move from one culture to immersion in another. For a few, it is their very first immersion in the majority culture. For me, it marks an entry into a new profession. From my position near the door, I can see us changing as we cross the threshold.

Bells ring. The students keep arriving. A few seconds later the intercom sputters static causing a moment of quiet in the room as the students try to listen to the principal’s voice. The hollow-box voice welcomes them to the first day of school with a discussion of the procedures for registration and class scheduling. A few halting efforts are made by some students to translate the principal’s English into Hmong and Khmer for others. This break in the classroom quiet inspires others. Soon the silence is completely dismantled as students resume their conversations with each other, trying to be heard over the principal’s disembodied voice and each other.

The excited efflorescence of exchanges in at least five different languages rises above the desks and fills my ears. It’s not only students’ languages that are different. Their postures, their accents, their dress all vary widely, both within and across language groups. It is easy to tell which students have been in the United States the longest. It’s not any one thing—like English fluency or clothing—it is subtle things—like what catches a student’s attention, the degree of deference shown to authority figures, what makes them laugh. From where I stand, the gradient of change is as clear as it is relentless. I have experienced it myself, how this country exerts a force on immigrant children.¹

Still, this force is only partially predictable in its effects. When the new meets the old, every group and every family has a unique experience. I look at my students and I see in their persons hundreds, sometimes thousands, of years of tradition coursing into this classroom. Like a diverted monsoon-fed mountain stream spilling across a new landscape, the comfortable fit of old river beds is gone. The momentum of the inherited current remains, cutting grooves in the new environment even as its energy is redirected. In an ESL science class, the violence and drama of that turbulent encounter can be seen up close.

The New Hmong Teacher

When the intercom falls silent with a static pop, the room suddenly feels more intimate. Taking this as my cue, I commit my first teacher-like act as a full-time faculty member at a public school. I mimic a strategy I saw my cooperating teacher use the year before—taking roll without introducing myself. The class begins to quiet down and listen for their names.

This is not an ordinary roll call. The importance of the first week’s attendance was discussed earlier in the week at a staff meeting. State funding,
it turns out, is allocated based on the first two weeks’ average attendance. “Some of our students, especially new immigrant students, seem to regard the starting date of school as negotiable,” one of the counselors explained, “so we need to encourage students to be here every day, especially these first few days.”

I was enthused to help in this effort until I heard someone mumble caustically, “You mean the Hmong students.” Someone else added, “Don’t they cost us enough already?” A woman’s voice just behind me whispered insistently, “Shhhhh! Michael is Hmong,” as if it was the expression and not the attitude that was inappropriate. As if this esoteric attendance policy should be self-evident to people for whom education has been handled informally within the extended family for centuries.

I try not to dwell on such incidents; I try not to let such negative thoughts affect my own. But the comments are still with me when I finish taking roll and notice that there is an extra person in the class, one more than there are names on my roster. This is odd, I think, because it is exactly the opposite of what I had been told to expect. I do a head count. Yes. One extra. The students seem to be watching me closely as I ask the person whose name I did not call to please raise his or her hand. I repeat the request in Hmong.

No one raises a hand.

How strange. For the first time this morning, I feel nervous. I get that sinking feeling you can get when high school students remind you that their cooperation is, ultimately, voluntary. It is the first day of class, I ponder, as I look at their unresponsive faces. Why are they resisting me? Not knowing what to do, I lean on procedure. I announce that I will need to call roll again, and you will need to raise your hand when I call on you and keep it raised. I repeat in Hmong and broken Laotian. Two students, at my request, translate my instructions into Khmer and Vietnamese. The students dutifully respond when they begin hearing their names, propping elbows up on desks. This compliance relieves my anxiety a little. When I am through I can easily identify the unlisted student, who is apparently not interested in hiding. He is Hmong.

The student is a square-built 15–16 year old with a baseball cap, jeans, and a white T-shirt, sitting in the front seat of the far left row. I walk to him and ask his name. “Steve Vang,” he responds with a noticeable accent, but in a tone that lets me know he will speak to me in English. Are you signed up for this course, Steve? “No. I’m supposed to be in Mr. Rutgers class now,” he says bluntly, but without defiance. I reciprocate his matter-of-fact tone when I ask him, So, why are you here right now, Steve? Why aren’t you in Mr. Rutgers class? He pauses. “I heard there was a Hmong teacher in this class. I’ve never seen a Hmong teacher before, only Hmong teaching assistants.”

Now it is my turn to pause. Though I’m not surprised by what he just told me, I am surprised by the candor of his curiosity. He just wanted to
see the new Hmong teacher, so here he is. I hold him in my gaze and wonder what he is looking for? He is not just looking at a fellow Hmong person, but a Hmong who has become a teacher, who has a position of respect in America. I came here to teach science, but he is not looking for science. I suspect he is wondering about me, about whether I am more Hmong or more American. I am afraid I don’t have an answer to that question.

I think that if I shared that thought with my colleagues it would surprise them. They all seem to think I am the success story Hmong students need to meet. I heard enough pithy refrains about the need for role models in my interviews to last me a lifetime. I always wanted to toss back the question, “Role model for what?” Unlike most Hmong families, my parents chose not to emphasize contact with the Hmong community when raising me and my siblings. After we arrived in the United States my parents continued observing the rituals and traditional practices, but they moved to a city without a large Hmong population and sent us to a predominantly white suburban school. As a result, I have lost much of the Hmong language I spoke as a child and almost all of the beliefs.

Although I have no desire to go back to believing in many of the things my grandparents did—such as giant cannibals, apparitions, and the Hmong Grandfather, Yawm Saub—I regret much of my cultural loss. Over the last few years I have begun participating in the communal rituals again. I feel that when people refer to me as a “role model” they are celebrating my cultural loss and wishing it on my students. They are hoping students will become Americanized like me. It doesn’t occur to them that I may be conflicted about this transformation, that maybe the Hmong culture has elements that are better than the alternatives this country offers.

I tell Steve that he needs to go to his assigned class. If you want to spend time with me, I offer, you are welcome to come to my room at lunch, or after school, with your friends. It would be good if you did that. But now you need to go to your assigned class. Steve acknowledges my directive with an “O.K., Mr. Chang,” takes his notebook, and leaves.

All that day and for the next two or three weeks, students—Hmong students—peek in my class during passing time, stay during lunchtime, and come in early to my class. At first I am made uncomfortable by their scrutiny and hurry them off to class before I actually need to. The persistence and the respectfulness of their curiosity, however, eventually wears away my discomfort. By the second week, I am enjoying their company and questions and am letting them stay for as long as they want.

Nine Weeks Later: A Cellular Biology Exam

It is the end of the first term and my last class is finishing their final exam. As I look at the stacks of papers, I feel washed out, like something big has
come to an end and it is time to give in to exhaustion. I still have to grade the exams, but I don’t want to think about that right now.

I teach four ESL biology classes made up mostly of Southeast Asian immigrants. The curriculum so far has not been elaborate. We spent the first couple of days introducing ourselves to each other and establishing class habits and rules. I then informed the students that during the first six weeks we would study the smallest simplest forms of life—cells.

The unit included encounters with four basic concepts: cellular structure, cell specialization and division of function in multicellular organisms, DNA as molecularly coded information, and cellular mutation. The last week we spent reviewing and applying these four concepts. DNA, mutation, and cell specialization were used to introduce the idea of evolution. Two kinds of mutation were discussed: adaptive and maladaptive. We ended the unit with a short lesson on extremely maladaptive cellular mutations that get classified as diseases, namely, cancer.

My test on this cellular biology unit consisted of a few multiple-choice questions, some with illustrations. It asked them to draw a cell and label the basic functioning parts—a list of names was given to them. I asked them to explain what would happen to a cell if it lost one of its key parts, of which I listed the mitochondria, the cell wall, the endoplasmic reticulum, and DNA. Students could write their answer in Hmong, or answer orally if they so chose. Finally, I asked students to explain what mutation meant—how it helped a species and how it could hurt an organism. It was not an easy exam, but I wanted to start strong. I asked that they do their best. If needed, we will review again and they can have a second chance.

My desk sits between me and the few students who have stayed beyond the last bell to finish. The noise in our hall fades quickly as students move to the parking lot to socialize or depart. It is so quiet in the room you can hear the clock tick and students’ pencils pushing against their papers. One of the students is Lia Ying Xiong. This is curious, I think, because she usually finishes her work quickly and well. I notice her making several moves to get up, but then think better of it. Lia has been in the United States just over a year and language is a struggle for her, but she is more mature than her peers. She is registered as a freshman, but I suspect she is actually older than the average ninth grader. It is common for Hmong parents to be unsure of their children’s age because births are usually marked by season. Some parents may even see some value in misrepresenting their children’s age during immigration processing. The belief is that being slightly older than her classmates will help her succeed in U.S. schools. Lia, I found out recently, lived most of her childhood in the Ban Vinai refugee camp in Thailand. This was not far from Nong Khai, the refugee camp I lived in for three years.

Finally, when only two other students are left working, she rises, straightens her ankle-length dress, and approaches my desk holding her test. Well Lia, are you finished with your first high school science test? I ask. “Yes. I think I
did them right," she responds. “I think I did them O.K.” I am relatively
sure she has.

My worry for a student like Lia is not that she is unable to understand
the biology, but that she won’t get the chance to make the most of her
talents. Once she turns 15 there will be pressures on her to leave school,
or not pay so much attention to it, to either get married or take care of
her brothers and father until she is married.2 You are a good student Lia. I
am glad to have you in my class, I compliment her. You should go have a fun
weekend, and not worry about the test anymore. We will go over it all on Monday.

Lia thanks me and begins to leave, but turns back to face my desk. Is
something the matter, Lia? “Yes, I am O.K” she replies, not quite under-
standing the idiom. Her voice shifts to a concerned tone, “I have a ques-
tion for you, Mr. Chang.” Yes, Lia? She repeats, “I think I did O.K. on your
test Mr. Chang . . .” then she drops off. Yes, I reassure her, I am sure you did.
“Yes, I think so, but the question of mine is . . .” Her tone is fading. Then,
like a tree during a pause in a windstorm, her voice straightens “you don’t
really believe this do you Mr. Chang?” A surprised silence hangs between
us for a moment. I am not sure what she means, but the gravity in her
young voice holds my attention. Believe what, Lia? She points to the tests
sitting on my desk with an open-handed gesture I associate with female
Hmong students and says “In this ‘cancer.’ I mean you are Hmong. You
know a person gets sick when they lose their pleng,3 and they need the tvix
neeb4 to help guide their pleng back so they can be good again.”

Oh. That is what she means. Lia waits and watches me while I consider
what she has said. Her question is not really a question at all, but a state-
ment insisting that I recognize and validate the traditional Hmong expla-
nation of sickness.5 I pull myself forward in my chair and put my pencil
down. My first impulse is to politely and authoritatively reply that yes, I do
believe in cellular biology and in what I have taught her about cancer. I
feel an impetus to free her from a world filled with superstitions and align
her with a more “civilized” way of thinking about the world. However, I
hesitate. My eyes drift back down at my desk. I want to teach science, but
I don’t want to condemn traditional Hmong culture. I want to keep the
two separated. Lia’s question is pitting them against one another in a way
I have been trying very hard to avoid.

It’s not that I want to treat Hmong traditional culture as something that
can’t be challenged. I think it needs to be challenged sometimes. I believe
cellular mutation causes cancer. But Lia’s question is not just about DNA
and cells. Hmong beliefs about diseases are connected to other Hmong
beliefs about the world. Those beliefs are connected to people’s commit-
ments to family, community, and themselves. This fabric of beliefs brings
people together and enables them to live and love and support one
another.6

I can feel the weight of Lia’s gaze on me. My teacher’s edition of our
biology text is open to a chapter with the heading “Change and Evolution.”
It sits amid a cascade of papers that mirror the jumble of my thoughts and feelings. Maintaining a supportive community is especially high stakes for Hmong immigrants in the United States. In many families the Hmong fabric of belief is being worn thin. Young children are losing their connection to traditional practices; they do not understand the stories their parents tell them and their parents often do not understand the experiences their children are having. The result is often a lack of respect for parents and a rejection of their guidance.\(^7\) Sometimes this rejection is for the better; some traditional beliefs need to be reconsidered. The problem is that very little of substance is replacing the traditional beliefs. The growing vacuum of meaning in Hmong life is being filled, not by another healthy set of cultural values, but by a thin ethic of consumerism.\(^8\) More than 4,000 years of communal Hmong wisdom and solidarity are being eroded and replaced with vulgar individualism, hyper-sexualized images from music videos, and a craving for expensive clothes and tennis shoes (Thao, 1999).

The result has been that most Hmong are not conforming to the “model-minority” stereotype of Asians in America.\(^9\) The Hmong community in the United States shows all the signs of a community in distress—high rates of poverty and unemployment, high rates of high school and middle school drop-outs, high rates of health problems, including psychological depression, substance abuse, and suicide. This assault on Hmong cultural values is not an abstract issue. It affects people’s health, their bodies, as well as their minds.

I look again at Lia and I feel at risk of doing something wrong, of losing something very important. It is as if I am being presented with a game of jingo-stix—that game where sticks are stacked one upon the other and players take turns pulling individual sticks out of the stack without disturbing the larger structure. The loser is the one who pulls the stick out that finally causes the structure to collapse. I can contradict Lia’s belief about the pleng and cancer. I can suggest her beliefs are superstitious and tell her the scientific view is a more accurate account of reality. And maybe that would not affect her overall identity at all. Maybe she would find a way, by herself, to integrate these unfamiliar ideas into her sense of being Hmong.\(^10\) But there is always the chance that this would be the one thing that finally sent her whole Hmong identity into collapse. The risk of contributing to that grips me with concern.

After what seems like a long time, I draw a breath and tell Lia that I need to think more about her question. I don’t want to answer such an important question too hastily, I explain in my stilted Hmong. Let’s talk about this again after class on Monday. She seems pleased with my response. “O.K. Mr. Chang. Thank you!” she says cheerily, and turns for the door, where she offers another “Thank you!” before leaving. I listen to the receding voices of her and some of her friends who were waiting in the hall, but they are speaking Hmong too fast for me to make out what they are saying.
What Do We Owe? What Do We Need to Know?

The biology tests sit on my apartment floor waiting to be graded. Every test I pick up causes me to think about the stories I know about that student. I picked up Lia’s test 15 minutes ago but haven’t made a mark on her paper yet. I have walked to the kitchen twice for no reason. I sit on the couch and look outside my apartment window at several Cambodian, Hmong, and Latino immigrant children playing with a sprinkler in our common yard. One of the older Hmong children pinches the water hose causing the sprinkler spray to shrink to a trickle and the others to shriek and object. A young Hmong child still in diapers, who had previously been playing in the shower, approaches the sprinkler head looking confused. I tense up in anticipation at what I know is coming. I find myself laughing reluctantly at the face full of water he gets.

I suppose my concerns about Lia may seem overwrought to some or just plain incomprehensible. “The Hmong experience of immigration doesn’t change the scientific truth,” someone might say. “Your job is to teach science to all students.” I believe that. I believe it is important to teach all students—Hmong, Lao, Cambodian, Muslim, fundamentalist Christian, European American, everyone—the best scientific understanding we have of the physical world. We owe that to our children. But what else do we owe our students? That’s the tough question. And what do teachers need to know to be able to give this “something else” to them? Lia’s question is forcing me to think more deeply about this.

On the one hand I believe scientific principles transcend cultural differences; for example, the gravitational constant is the same no matter what language you speak or what religious beliefs you hold. I also believe the science curriculum needs to focus on Western scientific knowledge about the physical world. I don’t think anyone needs to formally teach Hmong children about the pleng in science class. On the other hand, I have always objected to the way some educators use this conception of science knowledge to justify entirely ignoring cultural difference in their classrooms. I find this refusal to respond to cultural difference in a science classroom immoral and unprofessional. It is not just bad teaching. It is inhuman to ignore how schooling impacts students’ larger efforts to make sense of their world—especially in the case of immigrant students, for whom this sense making can determine the whole course of their life.

Up until now, I have resolved the tension between these two views by oversimplifying the issue. I have let myself believe that cultural responsiveness in my science classroom would just be a matter of respectfully acknowledging folk understandings of this or that phenomenon—like the pleng. My job, I thought, would be explaining how biology and chemistry concepts are something different from these folk understandings—insisting that they were separate issues. Lia’s unexpected question, and the concern it makes me feel for her, are making me see how it is more
complicated than that. Her question suggests that scientific understanding can’t be sealed off from the rest of students’ lives, like a specimen in a jar, just to be observed in a specific classroom lesson. The meaning of the science curriculum leaks out of our lessons and may affect the meaning of students’ lives far outside of the school building, for good and sometimes for ill.

So what does this mean for how I think about my science curriculum? The core science concepts I need to teach Lia are the same science concepts I would teach anyone. Yet, the meaning of that science extends beyond the immediate concepts. They refract through her unique prior experiences and take on additional meaning in her life outside the classroom—including her life as a member of a Hmong community. It is an arbitrary logic, driven more by a need for convenience than by honesty, that calls one part of this meaning the curriculum and the other not. Practically, everything my students take from my class is the curriculum. Once I start thinking this way, however, where does it stop? How far outside the classroom and into the world should my conception of the science curriculum travel?

I pick up Lia’s exam again. Thinking about her question, I reflect, has made me feel something like the child outside with the stunned look, water dripping from his face after being surprised by the sprinkler. Teaching science in a culturally respectful way is not turning out to be what I expected. The curricular issues I find myself wrestling with are tangled up with broader issues—issues that I don’t see being resolved anytime soon. For example, I don’t see how I could feel at peace about questions like the one Lia asked until there is real respect for difference in our society—until immigrants are no longer treated as second-class citizens in the United States whose well-being is less valued than their conformity. I don’t see that kind of unprejudiced community on the near horizon. In the meantime I am teaching my classes, and my students have needs.

This raises a practical question: As long as this kind of persecution of difference is a fact of life in U.S. communities, what do I, and other teachers, need to know in order to respond to cultural conflict in a science classroom in a caring and competent manner? My experience tells me that in order to deal with cultural differences in the science classroom, teachers need to know more than their subject matter. They need to know more than generic pedagogical theory. And they need to have more than a general inclination to reflect critically on their practice. They need to understand something about the specific cultures of their students and how it relates to the cultural assumptions in the curriculum they are teaching. To illustrate the kind of understanding I am referring to, I am going to share a little of my own life story and what I know about Hmong history. Then I will describe the way that knowledge informs the way I respond to the possibility of conflict between the science curriculum and culture of my Hmong students.
Early Memories of Laos

The first fact of immigrant life is that you have no choice but to deal with a majority culture that is not your own. For refugees, this fact is especially fatiguing because past experiences with majority cultures have almost always been negative and violent. The Hmong are refugees. The persecution we have experienced in the past continues to influence the way we see the world, including things like American culture, American public schools, and the science curriculum. It inspires a wariness about the purposes behind majority culture institutions and practices. I can see this wariness operating in my own experience, and I do not regret it. I think it is justified by my own experience and by Hmong history.

My life began amid global cultural conflict. My parents tell me I was born on an airfield while they waited to be airlifted by a U.S. AID plane to escape Communist forces that were converging on their town. The Americans were moving us higher into the mountains because the Hmong had been secretly helping them fight Communist forces in Laos. We were being relocated to Muang Cha, a village in the highlands of the Laotian mountains next to the highest peak in Laos called Phou Bia.

I have only fragmented memories of the long rainy seasons and warm summers in Muang Cha. I played under my mother’s watchful eye. I waded in the shallows of the Muang Cha River that carried crystal clear water from Phou Bia down into the valley. I would run through the orchards and climb the peach and grapefruit trees. There was one main dirt road through the village and smaller ones branching off from that. I remember competing with other children to see who could find unsmashed bullet casings lying in the road. We would clean them out and blow on the open end, making toy whistles.

We played freely in town, but there were definite limits. All children knew not to travel into the jungle on the downside of the mountain. Our enemies, Laotian Communist soldiers, were there and would shoot Hmong on sight. This was literally true. I recall people disappearing and the upset of their families. There was also talk about Americans—scary stories about blond-haired blue-eyed giants who ate small people, like the Hmong. The Americans were said to be among us because they were providing us guns to fight our enemies. I knew I would run and hide if I ever saw one while alone, but I never did.

I remember Laotians soldiers arriving in our village before we left. They were, I now know, part of a brief coalition government between Communist and French-Royalist forces. Off-duty Communist soldiers would walk through town talking to people, promising the Hmong a new beginning—a free, fun, and prosperous society. Their presence and talk made the adults very anxious.

It was like a great shadow had fallen across our house and the village during that time. First, travel restrictions were announced. Then the school
where my father taught was closed. After that all he could do was stay at home and worry. My father and mother argued. Father talked of joining a group called “The Lords of the Sky,” fighters who had retreated even higher into the mountains. My mother didn’t want him to go fight. She wanted the family to flee to Thailand, but rumors of a large column of Hmong refugees trying to escape to Thailand being massacred by government troops made my father reluctant to do so.

One night my father took us to the next village to visit our Uncle Thoua, a colonel in the Hmong army. Several relatives had gathered there to discuss what the future would hold for the Hmong and our families. Many of my uncles were in the military and had fought against Communists. They were afraid of reprisals. The atmosphere was tense. Whereas usually the children would play, this time we stayed inside and listened to the adults talk.

“General Vang Pao is the only one that will be able to save us. He is the Hmong King,” Uncle Thoua declared. General Vang Pao was the Hmong military leader with connections to the U.S. CIA.

“If there was a Hmong King, then the Hmong would have not suffered so much for so long,” Uncle Lue objected. Uncle Lue was not in the army. He worked an orchard. “We’ve been had and used. We’ve been divided and conquered many times over because ‘Hmoob Tsis Hlub Hmoob, Leej Twg Yuav Hlub Hmoob?’ ” This well-known phrase literally means if “Hmong not love Hmong, who will love Hmong” and is used to incite feelings of patriotism and isolationist solidarity.

After this remark the conversation opened up with everybody talking at once. “That day will come when the Hmong King shall raise up and unite the Hmong people and show us the way.” “When will the Hmong King come? How will we know?” “General Vang Pao is the Hmong King. He has shown us the way against communism and he will get us out of this misery. Five years from now, we will be victorious.” “But where is General Vang Pao? Rumors have it that he has fled to America to live with the giants.” The mention of America stopped the conversation.

“He is only there temporarily to learn more knowledge,” Uncle Thoua confirmed and explained. “He shall return soon and share his knowledge with us. Some others of us officers may join him soon.” This revelation shocked some of the family, especially the elders.

“You would go to America? Why would anyone want to go to there? It is the land of the giants.”

“I go to follow our leader, General Vang Pao,” Uncle Thoua asserted confidently.

Again the conversation opened up, everyone speaking over the other. Such was the fear America held for the Hmong. “I heard that in America you have to abandon Hmong traditions and become a Christian or else the giants will eat you,” a man my father’s age exclaimed. “Yes, I heard that it is a land where children become parents and parents become children.”
“It is a land where people have sex with animals.” “I heard when you die there, they cut your body open.” “These stories can’t really be true, can they?” “If our leaders go to America, what shall we do?”

“You must go to Thailand and await our return,” Uncle Thoua advised. “The communists are coming. It will not be safe to stay here. But we will return and reclaim our homes. Remember that General Vang Pao said that we would never lose our land. America would never let it happen.”

Our Flight

Perhaps the most frightening time of my childhood was during our flight from Laos. A few days after our visit to Uncle Thoua’s, my parents told us we were going on a visit to see my grandparents who lived in the next village but, oddly, we didn’t pack any bags. We left Muang Cha with only the clothes on our back and a small bag filled with cooked rice, water, and dried meat. I remember my father telling us that if they—meaning anyone Lao—asked who we were, we were to tell them we were Lao, not Hmong.

My father had arranged for a car ride with a Lao man to Vientiane, the capital city situated next to the Mekong River. Across the Mekong River was Thailand. We stayed in a hotel in Vientiane for several days. I don’t remember us even talking. Father would go out into the city periodically and return looking worried. One night my father woke us and said it was time. It was just after nightfall. We took a cab to the river’s bank just outside of town. At first the river looked empty and foreboding, a wide expanse of blackness that I couldn’t see across. But as my ears adjusted I could hear the small motors of boats that were zigzagging back and forth on the surface of the currents. My father stood on the water’s edge and waved his hands. A boat came by within a few minutes. My father handed a large amount of money to the man in the boat after a rushed negotiation. The man ushered us onto the wooden boat and within five minutes we were in Thailand. Thai people were waiting for us on the other side. They put us in a pickup truck and we were driven to a hastily set up refugee camp in Nong Khai.

The living conditions were primitive in the camps, but I remember most a feeling of relief upon our arrival. I heard my father and mother laugh in a way I hadn’t heard in months. A few days after our arrival, a birthday party was held for me. I was six years old.

The Refugee Camps

The camp was very crowded and loud. Although it provided relief from some of our gravest worries, it offered no respite from the feeling that we
were an unwelcome minority culture that others wanted to change or avoid.

There were many children in the camp so “school” classes were created for us. This school was an interesting and disturbing story. It was operated by a Catholic organization and administered by a Catholic priest the Hmong called Txiv Plig. It was my first experience of organized schooling. They taught us to read in Hmong even though Hmong was an oral language with no written alphabet—the missionaries had invented a written form of Hmong in the 1950s. At the time it was fun and exciting to be among the first of our village to learn to read Hmong. In retrospect I can see it was just part of one more effort to change the Hmong. The missionaries wanted to replace the Hmong religion with their own, and to do this, the Hmong needed to read their Bible. A Hmong translation of the Christian Bible was distributed in the camp.

This was a more subtle kind of cultural conflict, one that would have been lost on me as a child. It was not lost on my parents, however, who remained very wary of the Christians and their schools. I remember wanting to be a Christian very badly as a little boy. The missionaries were very generous to those who converted. The desire to become Christian intensified when the talk started much later about going to America. Those who had converted spread rumors that you had to be a Christian in America or else you would be eaten.

There was other missionary work about. Christian organizations would come into the camp and give us food and clothes. When the trucks came, we all swarmed them with our hands up in the air and they would throw the food and clothes in all directions. I remembered being sad because I was small and the only thing I ever successfully grabbed was a single glove. Once the food and clothes were gone, another truck would come with a video camera mounted on it. Then they filmed us eating and trying on the clothes. I remember being very excited that I was going to be in a movie.

Some things were just foreign to us. For example, we had to take shots in the arm that were very painful in order for us to receive meals and go to school. I resented this more than almost anything else—my arm would hurt for days. The Hmong called the shots tshuaj tuag aws—foul medicine.

The worst thing in the camps was what we were hearing from inside Laos. Just a few days after we crossed the river, the coalition government in Laos fell and the Communists took control of the country. Within weeks, the new government announced a policy of Hmong extermination. Any hope of a swift return evaporated. A Hmong exodus to Thailand began. It was a desperate migration of tens of thousands of people that would take 20 to 30 days of travel through very dense and dangerous forests. I heard bits and pieces of terrible stories from children who survived this flight. They looked awful on arrival. Hundreds of emaciated, wounded, sick, and crying people further crowded the camp.
Later, when I was older, my parents would fill in the details about this exodus. The clans were forced to make a path through the most treacherous country in Laos in the hopes of avoiding patrols. But patrols found the refugees anyway, sniping, robbing, and worse. Land mines were laid in the path of the fleeing families. Starvation and sickness claimed many lives during this flight. Estimates are that as many as 50 percent died in the passage. Mothers watched their children die. Children were orphaned. Such was the terrible pace of this march that there was no time to mourn the dead, or conduct the proper rituals that people believed would permit their loved ones to find their way to their spirit home. The people who survived this journey were often wounded physically and emotionally. Elders today rarely speak of it, and when they do, they refer to it only as “the bad time.”

If Laos looked threatening, Thailand did not feel much better. The Thai people and government were not happy about our arrival. As the numbers in the camps grew, so did Thai resentment of our presence. Camps were deliberately kept small and crowded and hunger was common. They did everything they could to make it clear we couldn’t stay. I remember hearing of police and mobs beating several Hmong men who ventured too far out of the camp.

The U.S. government, under pressure from the Thai government, eventually agreed to accept a certain number of Hmong refugees annually as immigrants. This did not provide the Hmong with comfort. Terrible stories about America circulated among the Hmong—from stories about violent giants to stories about hospitals that do experiments on Hmong people. International conventions specify that refugees cannot be forced to migrate, so many Hmong refugees chose the lesser of three evils—staying in the camps, some for as long as 20 years. A generation of Hmong children, like Lia, were born in those camps and knew nothing else.

My parents were among those reluctant to come to America. Even though Uncle Thoua had sent back messages to my parents that it was safe in America, my parents waited three years, hoping for a safe return to Laos. Finally, when they were convinced we would not return to Muang Cha, they decided to join our uncles in America.

I remember getting on the plane. It was not an ordeal until it took off, which frightened many of the Hmong passengers. I remember being surprised by how nicely the giant white-skinned woman on the plane treated me. She gave me a coloring book and color pencils to play with. We made two stops before I remembered seeing tiny lights on the far horizon. We did not know where to go when the airplane stopped. Everyone got out while we waited in the airplane. When we finally emerged into the Los Angeles airport, my Uncle Thoua along with other relatives and news camera crews were there to receive us.
A Long History of Persecution

That was a child’s eye view of recent Hmong history. I hope it gives some sense of the world my Hmong students like Lia are coming from—one where the threat of hostility from majority cultures is a very real and a taken-for-granted part of life. My memories, of course, tell only a fragment of the Hmong history that lies beneath the surface of contemporary Hmong life. Some awareness of this greater history is also important to understanding my encounter with Lia. It helps explain how deeply ambivalence about majority cultures runs in the Hmong community.

Although the Hmong have never had their own nation, a distinctive Hmong culture has persisted in Asia for at least 4,000 years (Thao, 1999). This distinctiveness has been a source of pride and hardship for the Hmong people. We have been a persecuted ethnic and religious minority in Asia for more than two millennia, at various times harassed, hunted, and warred upon by the more numerous peoples among whom we lived.

The earliest records we have of organized hostility toward the Hmong originate in China. Chinese emperors waged wars aimed at assimilation or extermination of the Hmong repeatedly from the time of the Han Dynasty (second century B.C.) to the present. The Hmong, often at great cost to themselves, rarely surrendered. So fierce were Hmong counterattacks that in the 16th century the Ming Dynasty built a smaller version of the Wall of China to protect themselves from the Hmong. Near the end of the 18th century, the Manchu Dynasty began a war of all-out extermination on the Hmong that resulted in a large number of Hmong fleeing to the mountains of Vietnam and Laos.

Starting in the early 20th century the Hmong once again faced efforts to forcibly assimilate them, first by nationalists in Vietnam and Laos then later by the French colonizers who conquered both nations. In each instance, the Hmong fought back and, when necessary, retreated higher into the mountains. The Hmong were not put in extreme jeopardy, however, until the United States and Soviet Union became heavily involved in regional political struggles.

In the 1960s, international treaties prohibited the United States and the Soviet Union from having a military presence in Laos. The Soviets, however, were supporting an indigenous resistance to French colonialist rule that was growing in strength. The United States was looking for ways to contain Soviet influence in the region. It also wanted a way to carry out missions in Laos that supported its military action in Vietnam. The Hmong, because of their history as fighters and their persecution at the hands of the Laotians, were the perfect candidates.

Most Hmong initially rejected the CIA’s overtures. Distrust of Americans was as high as was the fear of the Laotians. A few wounded and angry villages, however, made alliances with the CIA. Once a few Hmong were fighting for the United States, the retaliation was universal and there was little
choice but for everyone to join. A guerilla army was formed. For 10 years the Hmong fought for the United States in their secret war against Communism in Southeast Asia (Hamilton-Merritt, 1999).

Eventually the United States lost the war across the mountains in Vietnam and, with very little warning, pulled its operatives out of Southeast Asia. The CIA had promised support in the case of a pullout. In the end, all that came of these promises was an airlift of a few hundred Hmong officers and their families out of Long Tieng. More than 10,000 Hmong were left crying on the airstrip, some clinging to the U.S. helicopters as they took off. Tens of thousands more were left in the countryside. Resistance to Communist rule collapsed quickly in Laos and the Hmong flight to Thailand—the “bad time”—began.

Given this history of being victimized repeatedly by imperialist violence, it should be little surprise that the Hmong, wherever possible, seek to isolate themselves from potentially hostile majority cultures. Stories of our stubborn commitment to remaining a distinct cultural group, “by fight or flight,” are still told proudly in Hmong communities. Resistance to the pressure to assimilate is among the highest Hmong virtues. So when Lia questioned my cellular biology curriculum, she was not simply noticing a contradiction in two belief systems that she found interesting. Neither was she just working out her own personal feelings about science and her religion. She was enacting a two-millennia-old pattern of resistance to majority cultures that presume their own superiority. Lia was being very Hmong.

Ann Fadiman, in her book about a fatal misunderstanding between medical professionals and a Hmong family, summarized the lessons that Hmong history could provide to social service providers.

The history of the Hmong yields several lessons that anyone who deals with them might do well to remember. Among the most obvious is that the Hmong do not like to take orders; that they do not like to lose; that they would rather flee, fight, or die, than surrender; that they are not intimidated by being outnumbered; that they are rarely persuaded that the customs of other cultures, even those more powerful than their own, are superior. . . . Those who have tried to defeat, deceive, govern, regulate, constrain, assimilate, intimidate, or patronize the Hmong have, as a rule, disliked them intensely. . . . On the other hand, many historians, anthropologists, and missionaries have developed great fondness for them. Father Savina [French missionary, 1924] wrote that the Hmong possessed “a bravery and courage inferior to that of no other people,” because of which “they have never had a homeland, but neither have they ever known servitude or slavery.” (Fadiman, 1997, p. 17)

The Hmong Arrive in America

The reception the Hmong have received in the United States has done little to reduce our wariness of U.S. culture. We have not been hunted down nor collectively warred upon by the government here, but there
has been little respite from cultural harassment, condescension, and pressure—occasionally violent—to assimilate.

It is important to keep in mind that most Hmong fled Laos in order to preserve their cultural distinctiveness and solidarity, not to survive—or even prosper—individually. From the moment of arrival, however, the Hmong have experienced systematic obstructions to this effort. For example, the U.S. government, in an effort to avoid overburdening local communities, relocated Hmong to several different cities around the nation, including several places in California, Oregon, Montana, Pennsylvania, Minnesota, and Maine. Clans were separated and, occasionally, extended families were divided. Many Hmong felt deceived and betrayed once again when they found themselves scattered in this way.

The Hmong quickly subverted federal settlement plans. Communication networks formed quickly within clans once Hmong arrived in the United States. The Hmong began migrating to places they could be together despite government disincentives to moving. In the early 1980s, the Hmong in Portland Oregon, nearly 3,000 people, uprooted and moved to the Central Valley of California in the space of a month. Other newly arrived Hmong communities did the same. When this second, internal migration had settled out, Fresno and Merced were home to more than 10,000 Hmong—one of the largest communities of Hmong immigrants in the country.

Government policy has been only one difficulty. More distressing has been the resentment the Hmong have encountered in the communities within which they have settled. There is a pervasive sentiment that every immigrant who comes to America has dreamed of coming here for most of their lives or, once they are here, will recognize how much better it is than where they were previously. Consequently, immigrants who are not happy about being in America are considered ungrateful or backward. “If they don’t like it here, they ought to go back to where they came from,” is the often-expressed sentiment.

Real immigrant experience is more complicated than this attitude allows, of course. Some immigrants do come to this country enthusiastically, eager to conform to provincial expectations. Other immigrants, however, do not come to this country voluntarily. They preferred their original home. For these people, it is natural or political disaster, not the promise of a better life, that forces them out of their homes, often never to return. People in this situation want to be changed as little as possible by their new country, not out of disrespect, but out of a need to limit the almost total loss they have experienced. It only adds to their burden, therefore, when they are greeted in a new country with a stern expectation that they should be thrilled about their displacement.

This general lack of sympathy for immigrants has been intensified for the Hmong for a number of reasons. Many Hmong customs seem bizarre to Americans—from the killing of pigs in healing rituals to the need to
bury a baby’s placenta at home after the birth. Less exotically, the large influx of Hmong severely strained local social services, as the federal government had feared it would. Many of the communities where the Hmong gathered had high unemployment that got worse during the recession of the early 1980s. Predictably, this inspired claims that the Hmong were “taking jobs” from the American people, despite the fact that unemployment rates among adult Hmong men exceeded 50 percent and despite the fact that the job losses had more to do with factories closing and moving overseas to take advantage of cheap labor (often, ironically, in Southeast Asia).

Further fueling this resentment is the fact that a large number of Hmong are on welfare. Many Hmong elders consider welfare to be a substitute for military pensions they felt they were promised for fighting in the U.S.-sponsored war against Communism. Most Americans, of course, see it differently. They still have no idea about the covert military alliance between the Hmong people and the U.S. government and so see the Hmong as homeless mendicants to whom the United States owes nothing. Consequently, Hmong are often subject to withering accusations of being parasites and of taking advantage of the Americans goodwill.

Sometimes, the verbal assaults turn to physical assaults. During those first years in America, hardly a week would go by without us hearing some new story of violence against the Hmong somewhere in the nation. As a recent arrival, Lia did not live through this period, but she has undoubtedly heard the stories, which continue to be told in the community. Enough has happened to confirm for the Hmong that the United States is no different than other nations in which we have lived. It has same capacity for harassment and persecution of the Hmong people.

**Invisibility of Hmong Distinctiveness**

In addition to familiar patterns of condescension and harassment, the Hmong have encountered new forms of cultural pressure in the United States. Most of these arise from the fact that we are no longer in a majority Asian nation. We find ourselves subject to general U.S. racist attitudes toward people of Asian descent, such as presumptions of passivity, conformity, increased mathematical ability, and decreased verbal skills, as well as being frequently ignored or treated as if we are invisible. Additionally, Hmong distinctiveness from other Asian communities is obscured in America by the generic ethnic category of Asian American.

For example, yesterday one of my colleagues who knows I am Hmong asked me about Korean politics, as if I would know more about Koreans than he. This same person asked me why Cambodian students behave a certain way, as if I would know more about this topic as well. At the grocery store the other day I was referred to as “the Chinaman.” My landlord sent
electricians last week to talk to “the Oriental man in 205B” about fixing my light switch. A Latino colleague, commenting on the fact I was a science teacher, remarked that “you’re all good at science and math,” presumably referring to all Asian Americans. Commenting on my laugh, a neighbor told me I was “louder than normal Asians.” “In a happy way,” she hastened to add, “you speak up about what you think and feel. That’s good.” This practice of lumping all people with Asian roots into a single group persists despite the fact that “Asia” is more linguistically, religiously, and culturally varied than Europe and the Americas combined.¹⁶

The idea of the single Asian-American ethnic group is so deeply inscribed in this culture that it even influenced me for awhile. As an undergraduate, I would frequently seek out other Asian Americans hoping to find a social group in which I would feel comfortable. To my distress, this never seemed to work the way I hoped. I never felt like I fit in. The reasons for this remained obscure to me until my junior year at U.C. Davis, when I met four other Hmong students. The experience of becoming friends with this group was a revelation to me. Being with people other than my family whose rhythms and unspoken values were similar to mine put many other experiences I had had away from home in perspective. I learned that the term Asian American had very little meaning to me. I discovered that I am Hmong American. I am Hmong.

Students like Lia who come to the United States at an older age than I did probably will not be fooled as I was by the generic category “Asian American.” With fresh memories of racist maltreatment by both Lao and Thai people, the idea that all Asians are the same would simply seem too ridiculous to be entertained. But being treated by teachers as if the differences do not exist remains confusing. Slowly it comes to be felt as a rejection of Hmong culture, and by some as a demand to keep that culture and identity from view.

The Cost of the Pressure to Assimilate

What makes the Hmong experience in America most difficult, I believe, is proximity. The Hmong have faced and survived hostility before, usually by avoiding conflict. In the past the Hmong have tried to geographically isolate themselves from those who would like to change them. In the United States, however, there are no uninhabited mountains to take up residence in, no inaccessible valleys to which to retreat. At best, extended families can all live in a single apartment complex or clans can live in one neighborhood that others don’t wish to live in. Work, shopping, health care, and, above all, compulsory schooling, still require frequent interaction with the often hostile or at least disrespectful dominant culture.

The proximity to the intolerance of difference, plus the inability to enact traditional coping strategies, is proving corrosive to the mental and physi-
cal health of the Hmong. In her book about these matters, Ann Fadiman summarizes the psychological statistics.

[In a longitudinal] study of Hmong, Cambodians, Vietnamese, and Chinese-Vietnamese refugees, the Hmong respondents scored lowest in “happiness” and “life-satisfaction.” In a study of Indochinese refugees in Illinois, the Hmong exhibited the highest degree of “alienation from their environment.” According to a Minnesota study, Hmong refugees that had been in the country for a year and a half had “very high levels of depression, anxiety, hostility, phobia, paranoid ideation, obsessive compulsiveness and feelings of inadequacy”. . . . the 1987 California Southeast Asian Mental Health Needs Assessment . . . [found the Hmong to be] Most depressed. Most psychosocially dysfunctional. Most likely to be severely in need of mental health treatment. Least educated. Least literate. Smallest percentage in labor force. Most likely to cite “fear” as a reason for immigration and least likely to cite “a better life.” (Fadiman, 1997, p. 203)

Such psychological stresses in combination with the effects of poverty are in turn affecting the physical health of Hmong individuals and families. Infant mortality rates are high. Suicide rates are among the highest for Asian-American groups. Substance abuse, mostly alcohol, is on the rise.

Much of this individual distress is not immediately apparent to the majority culture. One reason is that on the more visible social indices—such as rates of crime, child abuse, illegitimacy, and divorce, “the Hmong would probably score better than most refugee groups (and also better than most Americans)” (Fadiman, 1997, p. 199). Additionally, over the centuries the Hmong have cultivated a collective style of cheerfulness despite harsh circumstances. It is rare that you will hear a Hmong person complain about his or her own circumstances.

None of the signs of distress are lost on the members of the Hmong community, however. Parents and elders—even my own parents—express feelings of failure when they see their children changing, being less respectful of the elders, speaking less Hmong, being less interested in the traditions. Their belief is that the traditions are essential for their children’s survival and well-being. Failure to pass them along means failing to take care of the children they love very dearly.

U.S. culture may be accomplishing through its fast-paced consumer culture, popular media, and educational institutions what thousands of years of military assault in Asia could not—the erasure of Hmong distinctiveness. The Hmong escaped Laos and the threat of physical genocide only to find themselves in America facing the very real possibility of cultural genocide. This prospect is probably the single greatest source of worry among Hmong immigrants. Children like Lia are aware of the worry. They hear parents talk about it and see the consequences of cultural change in their families and lives.

This threat to Hmong culture is so large and so overwhelming that I often have trouble finding words to describe it adequately. Recently I realized I may have always had the words and simply not known it. At a meeting
of a teacher-research group in which we discuss culturally responsive science teaching, I shared with the teacher-researchers the story of my plane ride to the United States. I told them about Hmong fears of white-skinned blue-eyed giants that eat smaller darker people. I ended by gesturing to the room and remarking: “See, the stories weren’t true. Now I live and work among the giants,” causing a few chuckles. A few moments later in the conversation, Roy Mendiola, a Mexican-American computer science teacher who also identifies as Native American, brought up my remark. “I understand what you are trying to say Michael,” he acknowledged. “But I want to offer you a word of caution about dismissing those Hmong stories you were told when you were young. While they might not be literally true, there may be a metaphorical truth to those stories that your people will need in order to survive in this country. Don’t be so quick to quit believing them.” The room became very quiet after Roy spoke because we all knew what he meant. What else is involuntary assimilation but one culture eating another one?

**Hmong Students in Public Schools**

I hope that what I have so far written has made more clear the turbulent cultural currents I see behind Lia’s reaction to my biology lesson. Let me now try to describe how this turbulence manifests itself in public schools. All the cultural conflict I just described is playing out in classrooms. The ambivalence of U.S. citizens toward Hmong is clearly evident in the schools. The conflicts Hmong refugees feel within themselves about preserving tradition and fitting in are also a feature of daily life for Hmong immigrant students.

One of my first indications of the school’s ambivalence toward Hmong students was the classroom I was assigned. When I signed my contract, the downtown administration had stressed their commitment to better serving the growing Hmong immigrant population in Fresno. My room assignment, however, said something else. It was nearly half the size of some of the other science classrooms. There was no lab area. There were no filing cabinets, no chalkboard, no teacher work desk. There were no windows. I have cleaned it up and tried to make it more cheerful. I have taken down old posters and put up photos of my family. I brought in some biology and anatomy equipment donated by other teachers in my wing. I installed a stereo in my room and between classes I play music. But none of this obscures the second-rate nature of the room. Did the administration think that this kind of second-class treatment was lost on Hmong students, that because they don’t speak English they can’t see the difference between their classroom and others?

The same hostility to Hmong culture that students experience in the general population frequently also occurs in encounters with students and
teachers at school. For the most part, majority students ignore Hmong immigrant students. Other Asian students ignore or scorn them. As for teachers, I have heard a few say blatantly racist things about Hmong culture—describing Hmong students as “primitive,” “lazy,” and a burden to the school and country. Others simply don’t bother to become informed and lump Hmong together in their minds with other Southeast-Asian groups. I recently overheard one of my colleagues ask his middle school ESL class: “Why do the Hmong have long last names?” Hmong do not have long last names, Laotians do. I saw Hmong student faces register their displeasure, though they didn’t say anything. If this seems like a small matter, consider the following. Many Hmong refugees have family members who were killed by communist Laotians—recently. In this country many Laotians continue to look down on Hmong.

As trying as this indifference and hostility is, the internal conflicts Hmong students experience about their cultural identity are probably more exhausting. At school, Hmong from many different stages of assimilation are in classes together. Students who have been here a little longer see and interact with students newly arrived from Thailand. Relations between these groups are friendly, occasionally humorous, and often strained. New immigrants remind others of how they are being changed by America and often comment negatively on the changes. The earlier arrivals give an indication to newcomers of what they can expect for themselves and often tease new immigrants about their difficulty with U.S. culture.

The effort to make sense of their struggle with assimilation has penetrated students’ language. They have developed slang expressions, such as the phrase *mob daj ntselg*, to describe the changes they see in each other. Literally translated this means “illness yellow ear.” All my students know this phrase. It is said to have been coined when a Hmong mother took her young son to translate for her at the doctor’s office. When the doctor wanted to know what was wrong, she said she believed that she had been pale, which in Hmong is described as a yellowing of the face, which includes the region around the ear. The young child translated literally, telling the doctor that the mother had yellow ears, which the doctor found incomprehensible. The term is now used to refer to cultural misunderstandings in both positive and negative ways.

Another phrase like this is “HTT” or “MTT.” The acronyms are short for *Hmoob Thaib-Teb*, which translates literally to “Hmong of Thailand.” It refers to the fact that some Hmong lived longer in the Thai refugee camps than others. Those that lived there a long time and came when they were older generally find it harder to learn English and U.S. customs than those who come here earlier. HTT denotes an inability to learn the language, social etiquette, and fashion of American life. Common usage would be: “Why are you so HTT?”

All this slang and discussion of differences reflects students’ collective effort to make sense of a genuinely difficult and anxiety producing
situation. I would go so far as to say that this is the central drama of their life at school, academics running a distant second. Students feel conflicted about the religious rituals in their community, conversions to Christianity, their relative skill with Hmong or English, their poverty, the subordinate status of women in the community, and many other large and small things. Most Hmong children like Lia generally want to stay Hmong, but more so than their parents they have to find ways of coping with and accommodating U.S. culture. In a profound way they are very alone in this effort. The resulting compromises are sometimes brilliant, sometimes hilarious, and sometimes sad or even cruel.

Last week I went by the blacktop basketball courts after school. I had heard that a group of tougher Hmong students played basketball out there and wanted to see what was happening. I stood at a distance and watched the Hmong students play. One of the students, a stocky boy with short hair, took his shirt off revealing a large tattoo across the whole of his muscular back. When he turned his back to me during the very fast-paced and skillful game, I could read the eight-inch Gothic-print letters of his tattoo. It read HMONG PRIDE.

I stared at his tattoo for a very long time, losing track of the game. Such body markings were signs of gang activity I had been told. But it wasn’t just gang activity, I felt. It was also a conflicted affirmation of his Hmongness. Here was a student clearly seeking to assert his Hmong identity against the forces of colonization, but he is left only with the tools of the colonizing culture with which to attempt this assertion. He was employing gang symbols, maybe real gang activity, which is part of American culture, in an effort to build a distinctively Hmong identity in America. I admired the effort, even as I questioned the means. I wondered how much that was really Hmong was left after blending it with such common and dangerous elements of American culture.

I, too, have Hmong pride, I thought to myself that afternoon. And I, too, am left with only the tools of the colonizing culture with which to assert my pride—the English language, a university education in the sciences, a career as a teacher.17 I wonder how much better my tools are than that young man’s. Are they better at all?

Science, Science Teaching, and Colonialism

It’s Saturday night. I got a call earlier from some of my colleagues inviting me to dinner at Mi Tierra’s. It’s a group of young teachers that meet once a month for Margaritas. I am afraid I am not being very good company. I am distracted by thinking about what I will say to Lia on Monday.

I push an ice cube down my drink with my straw and watch it rise to the top. I do it again. I am thinking about how naïve I have been. I wanted to
believe I could teach science without running into the cultural issues. The more I think, the more I see how impossible that would be—the more I see how my life has always been surrounded by conflict between Hmong culture and the culture of science.

“Hey Michael, you O.K.?” asks my colleague Larry, a surfer-style guy and a popular second-year mathematics teacher. Sure. I give him a smile. I’m just thinking about a student, I explain honestly. He inquires further and so I tell him about Lia’s question and try to briefly explain my concern. He immediately equates it to fundamentalist Christian demands to remove evolution from the biology curriculum. Thinking he is supporting my work, he insists that religion cannot get in the way of teaching true science. I have heard this analogy before and I don’t think it is accurate. It ignores the huge power differences between the Hmong and the majority culture. I suppose at some philosophical level the issues are similar, but practically they are not. Fundamentalist Christians are not facing the same danger of cultural extinction. In fact, sometimes they are trying to impose it on the Hmong.

I thank Larry for his support, but decide not to let on that I disagree this time. I would have to talk about the history and that’s too heavy a topic for happy hour. I hang around a little longer then take my leave. I mention having tests to grade, which makes everyone groan. A couple more people ask for their check.

Stepping out in the warm evening air, I scan the parking lot for my car. Looking at my keys I think about how much technology I take for granted. As I approach my car, the peal of a siren starts from far away, rises rapidly until the bright sound and light of the ambulance whips by on Blackburn Road, then Doppler shifts away. I listen to the sound recede a moment before I open the car door, drop down into the driver’s seat, and fumble with the ignition.

I open a CD by a local Hmong band named Voltage and am amused at the name. In practical everyday life, science and Hmong culture are always getting mixed together. I recall a recent class where the conversation turned to human reproduction, overpopulation, and birth-control technology. One of the more recent immigrants objected in Hmong, “But Mr. Chang, a Hmong man must have at least three sons in order for his liver to be satisfied. Some families are unlucky and do not get sons first, so have to keep trying.” I saw where this student was going and suggested that it was just as lucky to have a daughter as to have a son. I then shared with the students a story from my time in Thailand. I remember the nurses from the United Nations giving birth-control classes in the camp. My father and uncles came back shocked and appalled that the United Nations would promote this. It was such a foreign idea that they dismissed it as a tool intended to get rid of the Hmong people. I told students that I remembered playing with strange balloons after the classes, which made every-
one, especially the new arrivals, laugh. But elders’ suspicion was no laughing matter. Science and technology were assumed to be in alliance with the forces of colonization and extermination.

A few miles down the road I see the apartments the ambulance was headed toward. A police car and a fire engine have also arrived, their lights flashing across the complex walls at obtuse angles in complicated rhythms. Its an apartment complex I know to house a large number of Hmong families. I slow down to look, but can’t see anyone I recognize. I hope no one is badly hurt. I am sure I will hear about it in class Monday.

The scene brings to mind an event from a few years ago that still gets discussed among the Hmong in Fresno and across the nation. In 1995, a two-year-old Hmong boy was diagnosed with testicular cancer at the local children’s hospital. Doctors from the children’s hospital consulted with the parents and insisted that chemotherapy was the only thing that could save the boy’s life. The parents were suspicious of the doctors to begin with and so had waited longer than they should have to bring in the boy. When the procedure began causing cause hair loss, they became alarmed. Total hair loss is often associated by the Hmong with the preparation of live stock before eating them. The parents, trying to assure themselves of the doctor’s intentions, wanted to know if the doctor could guarantee the boy’s survival. When the doctor would not make any guarantee to the parents, the parents quit taking the boy for treatment.

The doctor referred the case to a social worker and the social worker, citing clear scientific evidence of medical need, obtained a court order to carry out the operation over the parents’ objections. According to newspaper accounts, the social workers visited the parents, but when it became clear the parents were not going to cooperate, the police were sent. The mother held the police at bay for three hours by brandishing a rifle. Eventually, the police forced themselves inside the apartment, subdued the woman, and took the crying sick boy out to a waiting ambulance. A crowd of Hmong residents yelled and jeered at their actions. The father, seeing his wife beaten and his son “stolen” by the police, came out to the door and pointed the knife toward his stomach in an attempt to commit suicide in front of the police. Police officers who had stayed at the door rushed the man back inside the apartment unit, where he claims that they beat him, possibly in an effort to take the knife away from him.18

This is not a unique story. Accounts of such violent enforcement of medical norms saturate conversations in the Hmong community. In 1990, a Hmong child born with a club foot was taken away from his parents by social workers in collaboration with doctors to have corrective surgery performed even though the parents adamantly objected to it.19 The Hmong parents believed that the deformed foot was a direct result of a curse placed on the family. The only way to get rid of the curse was to leave the child’s deformed foot alone. By correcting the foot, the parents believed that the curse would remain within the family and manifest perhaps into something
more tragic. Ann Fadiman (1997) has written a book, which I highly recommend, that documents yet another incident in which cross-cultural confusion led doctors to legally take an epileptic girl from her parents and put her in foster care, where she slipped into a coma and later died.

The primary source of Hmong encounters with the world of science is the health care system and because of incidents like these, that experience has not been good. For the Hmong, such experiences fit a long pattern of other cultures trying to force their beliefs and practices onto us. Even though I believe in the value of modern medical practice, I find it hard to argue against this interpretation. A society governed by scientific rationality would presumably rely on persuasion rather than force to convince others of its views. That’s the whole point of science and rationality—persuading people of things by logic and evidence, not through intimidation. But in the above situations we see a scientific solution to a problem being enforced by a squad of armed police officers. What is this but imperialism? Might makes right. There is a gap between the philosophy and the practice here, one that fits a pattern with which the Hmong community is only too familiar.

Herein lies, I think, a critical insight. The connection between science and culture comes in, not when determining basic physical truths, but in the way science is linked to status and authority. This in turn is used to enforce certain kinds of values and actions on people. This kind of authority is probably invisible to people who take science for granted, but it is very visible to newcomers to this culture. I think, like most science teachers, I have been taking that status and authority for granted. I wanted to hide behind the idea that science is just about the physical world. This attitude, I am beginning to see, is irresponsible. The science subject matter is not experienced by my students as something separate from their questions about religion, identity, and community commitment. Even if a teacher philosophically believes that science and culture should be separated in our thought, that doesn’t change the way they actually operate in our society and the way children experience them. As teachers we need to deal with real children and their actual experience of science, not ideal children and ideal conceptions of science subject matter.

I pull into the parking lot next to my apartment and slowly guide the car to a rest between two other cars. I turn off the engine and the CD player goes quiet. The question returns to me—How far out into the world does my science curriculum extend? I lean forward on the steering wheel and look at the sprinkler the children had been playing with earlier. My focus drifts slowly across the grass of the apartment yard, to the fence behind our homes, into the background light of the city, and up to the faint canopy of stars and a crescent moon hanging above the planet. I see no easily identifiable boundary between the meaning in our daily lives and the laws of our physical universe. Ultimately, the whole world is in our curriculum, whether we want it there or not (Jackson, 1990).
A *Tvix Neeb* for My Mother

I suppose at this point I might be expected to say that the school has no right to impose Western ideas and cosmologies on unwilling Hmong students. Given the history of colonization, the distress of the Hmong community, the lack of healthy alternative values, this does not seem an unreasonable position to take. Stop the cultural assault first, someone could demand, then teach us science. But I can’t support such a demand. There is more to my story that prevents me from entertaining such a view.

Inside my apartment, I begin boiling water for tea. The smell reminds me of our kitchen at home where my mother would make tea in the evenings. My mother is the “more” of which I speak. Two years ago she was diagnosed with breast cancer. She is afraid of doctors and was not very informed about things like breast exams. She caught the lump late and waited to tell anyone. It was my sister who found out and told the family. My father then insisted that my mother go to the local clinic.

My parents do not have medical insurance and so could not afford private hospital care. Knowing this, the doctor who initially examined her referred my mother to the university hospital where he thought she might get the best possible care at minimal cost. To my very great distress, a doctor at the university hospital—thinking he was doing my parents a favor—told my mother that she could get full treatment of her cancer that would include a new experimental treatment at the cost for basic room fees. The research grant on this new treatment would pay for all the treatments. As soon as my parents heard the word “experimental,” they were not interested. They refused to check my mother into the hospital and returned home to discuss other options.

My brother and I immediately drove to Irvine to try to persuade my parents to reconsider. But my father wouldn’t listen. In consultation with the other elder men in the family, he had decided to take my mother to Mexico where they could get traditional therapies at a lower cost. My siblings and I were alarmed. We knew nothing about the hospital they had chosen, nor the qualifications of the doctors. My younger brother and I tried to explain the philosophy of a university hospital to them and why it was a safe option. We pleaded. Between us we offered to pay for another hospital in the United States. Still my father refused. It was not our place to question a decision of the elders he told me. His and my mother’s distrust of the U.S. hospitals was too high.

When I think about our pleadings with our father and how angry I was when he wouldn’t listen, I realize how much I do indeed believe in the value of science and modern medicine. The effects of colonialism on my community are real, but cancer is also real. And I wanted my mother to have the best possible care medical science could provide, not the best possible *tvix neeb*. Ironically, it was I who was sent to Fresno to arrange for the *tvix neeb* for my mother’s healing ceremony. I had to work hard not to inflict
my resentment on the man as I drove him to Irvine. My brother was instructed to buy the sacrificial pig.

My mother’s surgery was successful and the cancer is in remission. This has been confirmed by local doctors. We all hope it lasts. My father now wants me to go back to Laos with him to the burial ground of my grandfather and pay homage to my grandfather. He believes that one of the causes for my mother illness may be our failure to pay respect to the ancestors. So he wants to return to Laos, fix anything that may have happened to my grandfather’s grave, and kill and feast on a cow in honor of my grandfather.

When I think about Lia, I do not see in my mind just a person struggling against colonialism and assimilation. I also see a younger version of my mother. If Lia ever finds herself in situation similar to that my mother faced, I want her to be able to take care of her body better than my mother knew how to. To do that she needs to understand what is happening to her.

All that I have told you—my childhood memories, my knowledge of Hmong history, my experience of cancer in my family—is at work in my thinking about Lia’s questions and about teaching science to Hmong students generally. I will now return to the moment when Lia posed her question to me. I hope I have made clear how knowledge of Hmong culture and history influenced the way I understood this encounter.

Returning to Lia’s Question

“I think I did O.K. on your test Mr. Chang . . .” then she drops off. Yes, I reassure her, I am sure you did, Lia. “Yes, I think so . . .” Her tone fading again. “. . . but the question of mine is, you don’t really believe this do you Mr. Chang?” Believe what, Lia? She gestures to the tests sitting on my desk. “In this ‘cancer.’ I mean you are Hmong. You know a person gets sick when they lose their pleng, and they need the tvix neeb to help guide their pleng back so they can be good again.”

Her question is not really a question at all, but a statement insisting that I recognize and validate the traditional Hmong explanation of sickness.

I see Larry in the hall the next morning at the water fountain. He is taking Advil. He raises his eyebrow at me and quips, “Better living through modern chemistry,” then throws his head back as he swallows the pills. He pinches the bridge of his nose between his thumb and forefinger and informs me, “You got out when the getting was good.” How late did you stay? “Midnight? I don’t know. Anything to avoid grading tests.” Yeah, I didn’t get all of mine done either.

Larry follows me into my room. He walks over to my stereo and starts looking at the music selection. “The students say you have Hmong rock in here.” Yeah, lots of it. Its there on the left. Put some on if you want. He looks at
them awhile, but does not turn on the stereo. I organize my papers on my
desk and begin entering some test grades into my book.

After an extended silence, he inquires casually, “Have you decided what
you will say to that young woman? What was her name?” Lia. “Yes, Lia.
Sorry.” No, not really. I can’t seem to stop thinking about it, though. Larry pulls
up a stool on the other side of my desk and looks at me with genuine
concern. “I could tell last night that you were worried about her. And it
sounds like she is worried, too. She sounds confused. It’s good that she is
asking you for advice. She needs to hear the truth about the physical
world,” by which Larry meant the scientific truth.

I look at Larry for a moment, and decide to make the effort to explain
the sources of my feelings. I’m not sure, Larry, I say, putting aside my grade
book. I am worried for her. But it’s not out of concern for herself that she is asking.
I pause, just to be sure he is listening. She is worried for me. Larry furrows
his brow and looks a little surprised. “Worried for you?” Yes. She wants to see
how far I have strayed from the Hmong traditions that keep us healthy and happy.
In her mind, it is people like me that are the ones that are at risk, not her. Larry
ponders this for a moment. He rubs his eyes and says, “I’d never thought
of it that way.”

I finally see Lia fourth period. I have to remind her of our conversation
on Friday. I have thought a lot about your question, I understake considerably.
She appears eager to hear my response. We wait till class has ended to talk
at length. When we do, I affirm that I do believe in cellular biology and
that cellular mutation causes cancer. I also share that I think a commit-
ment to the Hmong community, values, and rituals is important to our
health. I add that there are many people who criticize Hmong traditions
and beliefs or who may think they are strange, but say I do not think that
is a reason to abandon them.

She had asked me what I believe, and I have told her. But I want a dia-
logue more than a lecture. After letting a silence hang between us for a
few seconds, I shift my tone and pose a question of my own. The Hmong
are changing in America, aren’t we? Lia looks up and nods. What changes do
you see? After a moment Lia responds in Hmong. “Children are less respect-
ful of their parents.” She adds, “Like my brother. He made my mother cry.
He stayed out all night last week.” I am sorry to hear that.

I wait a few more seconds and then ask, Do you
see any good changes? Lia takes longer to answer this question, and finally
offers, “In America I get to go to school longer.” School in the Thai camps
was just for the younger children. Yes, it is good for you to get more education.
Some changes here can be good. But we will have to work hard to make the changes
more of the good kind and less of the bad kind.

“My brother says the txiv neeb is crazy,” Lia interjects before I can
elaborate. I consider this disclosure. Having known frustration with the
traditional religious practices, I can, for a moment, identify with her
brother. Why does he say this, Lia? She tries to explain that her brother was
angry with the money their parents were spending on rituals with the txiv neeb when their little sister was ill. He told his parents they should just go to the doctor. This, too, made Lia’s mother cry. It’s clear Lia thinks her brother should not be behaving this way—that maybe he is crazy. I am beginning to get a sense of what might have inspired Lia’s question. Here is exactly the kind of erosion of family bonds that the pressure to assimilate is causing in the Hmong community. Here is exactly the kind of social disintegration that colonialism inflicts on its victims and to which I am afraid of contributing. Lia is watching her brother be pulled away from the family into who knows what kind of life. I do not want my affirmation of medical science to be an endorsement of her brother’s drift away from the family. I do not want my affirmation of medical science to be an endorsement of her brother’s drift away from the family. I do not want my affirmation of medical science to be an endorsement of her brother’s drift away from the family.

I am sorry your brother is making your mother cry. I can talk to him if you want me to. “He is not in school,” she informs me. Bring him by after school, then. She says she will ask him, but does not sound hopeful.

I decide to say more about the conflict I have personally felt between science and Hmong culture. Medicine is hard for our parents Lia, I start. They have reason to be afraid of doctors, hospitals, and government agencies. In the past, such agencies have done very bad things to the Hmong. Lia nods emphatically. I am affirming something I know she has heard before. But going to the medical doctors when you are sick is the right thing to do here in the U.S. I don’t believe hospitals here want to experiment on Hmong people, but I do believe hospitals are ignorant of Hmong tradition and that most government agencies have too little respect for the Hmong. I then share with her the story about my mother getting ill. I describe how my parents were afraid of the doctor and how this made me angry. Then I explain how they eventually sent my mother to both a doctor and to the txiv neeb. I find I am glad to say I was the one who arranged for the txiv neeb. When I mentioned his name, she knows of him. I explain in my broken Hmong that I think the Hmong in America need both the medical science and the Hmong traditions to live well. This is not easy, I confessed, and is something I was still learning how to do. Keep asking me these questions and we can think about it together, I offer.

Lia thanked me for talking to her and asked me some more about my mother before she left the room and joined her friends. I couldn’t really tell what she thought about my response. Did she regard me as someone drifting from the Hmong community, like her brother? Or did she regard me as an elder, who could speak for the community? I hope she could at least feel the respect I gave to her question.

I am left sitting alone in the empty classroom, staring at the stack of still ungraded tests. I feel restless. I guess I expected some sort of relief to come from talking to Lia. Instead, a general feeling of uneasiness remains with me. The more I think about it, the less I expect to ever feel at ease about such things, at least not until my students are no longer coming from embattled and colonized communities. No one thing I do will change the fact that the currents of Hmong culture are in turbulence. These currents
are seeking new grooves in a foreign landscape, but I cannot be sure that we as a people will avoid dissipation.

I am beginning to see this feeling of uneasiness—which has always been there at some level—not as a burden, but as an asset and a responsibility. Ignoring it, pretending there is some easy answer about all this into which I can retreat—be it a one-sided commitment to scientific rationality or to the sanctity of Hmong traditions—serves my needs, not the students’ needs. It is laziness and avoidance at best, cowardice at worst. To teach science to real immigrant students, not the ideal students we would like to have, requires giving up the refuge of certainty about these issues. It requires becoming open to the loss and sometimes painful changes happening to the students in front of us. And it requires understanding how the curriculum we teach can be simultaneously a gain and a part of those losses. I wanted to avoid that awareness. I wanted to believe science education was an unqualified good for all my students. Being a good science teacher, however, is requiring a more complicated view of things.

Here, then, is the conclusion to which I have come. Teaching science fully and well, and in a way that avoids blatant colonialism, requires teachers to know more than just their subject matter and some general principles of pedagogy. It requires some knowledge of the student’s cultural community and the history of that community. This cultural knowledge need not be comprehensive, nor does a teacher have to be a cultural insider to have it (though that certainly helps). But it is essential to understand some of the stories students bring to the classroom. It is only through such knowledge that teachers can avoid falling into the trap of easy and uncharitable oversimplifications of immigrant experience, which in turn inhibit the truly responsive science teaching that reaches all their students.

Immigrant communities do not need teachers who regard their culture as “broken” and in need of “fixing,” nor do they need teachers to treat their children as fragile relics to be preserved in a museum. What they need are teachers who can be in solidarity with them, who will listen and take the time to understand and support their values, not just the school’s values, as immigrants struggle to create a new identity in a new context. This will require a different kind of teacher preparation than is generally available now. It will require teachers learning about the history that lies behind immigrant student experience. And it will also require teachers who can revise their understanding of themselves and their subject matter so there is room in that understanding for the sometimes harsh reality of immigrant students’ experience. This may seem like a lot, but the alternative is simply unacceptable to me and should be unacceptable to all of us; the alternative is to be complicit with cultural genocide.

On my way out of the building that afternoon, I pass the blacktop basketball courts where I can see a new group of Hmong students playing full-court basketball. The group is a mixture of the regulars and some new
immigrants who don’t seem to understand the game very well, making for some comical activity.

I stand in the shade near the building and watch from a distance. I spot the student with the HMONG PRIDE tattoo. He throws the ball to a recent immigrant who is looking the other way and misses the ball entirely. The tattooed boy throws his hands up in the air and exclaims “I’m on team HTT!!” The ball rolls over near me and I pick it up. When the tattooed student trots over to retrieve it, I can see it is Steve—the student who skipped class to be in my room that first day. He recognizes me and greets me enthusiastically, “Hey Mr. Chang! I want to be in your class!” I laugh and throw him the ball. *Maybe next year you can be in my class.* As he turns back to the court I get a full view of the ornate dark green letters that are permanently injected into his skin. His body bears the marks of our struggle. All of us are being marked by the cultural conflict, I reflect, in one way or another. Our only choice—as Hmong and as teachers—lies in how we respond to this process. As I watch Steve play, I wonder who he turns to for advice. Does he talk to his teachers? Does he ever go see the *tvix neeb*?

A moment later there is a shuffle on the court as Steve goes for a layup, then careens loudly into another player, sending the student sprawling to the blacktop. The players become quiet and for a second I worry that someone was hurt. The fallen student is a recent arrival who is in one of my classes, Fao Xiong. After lying still on his back for a few seconds, Fao lifts his head and looks around. Steven stands over him, “Sorry Fao, You O.K.?” Steven extends a hand, which Fao looks at suspiciously at first, then reaches for with a wide but nervous smile.

As I watch Fao reach for and grasp Steve’s hand, the Hmong phrase used long ago by my uncle rises involuntarily to my consciousness, like some water-logged leaf stirred by a sudden motion from the bottom of a puddle—*Hmoob tsis hlub hmoob, leej tug yuav hlub hmoob?* Indeed, who will love the Hmong?

NOTES


3. This word is spelled according to the Romanized Popular Alphabet (RPA), generally accepted by Hmong and linguists (Fadiman, 1997). It is pronounced “plee.” Its meaning is roughly akin to that of the word “soul” in English.

4. This word is also spelled according to the Romanized Popular Alphabet (RPA) and is pronounced “tsi nee.” It refers to the official religious leader in the traditional Hmong community, sometimes referred to as the shaman.
5. For a thorough explanation of this view of sickness, see Fadiman (1997).

6. For example, the Hmong beliefs about disease are one of the primary ways that the community and extended family come together to reaffirm their connections. The elders gather to decide what should be done, a *tsix neeb* is brought in, resources are pooled to make sacrifices of chickens and small pigs. More than an individual is cared for in those rituals, the whole community is strengthened.


8. West (1993) and Giroux (1997) have made similar points about nonmajority children in this country in general.


11. A similar attitude toward cultural diversity in science classes was documented in the California Statewide Systemic Science Education Reform effort in the 1990s (Atkin et al., 1997).

12. In her book *Caring* (1984), Nel Noddings makes the case that placing the subject matter before the general welfare of the child is fundamentally unethical.

13. As mentioned in the Introduction, the importance of storied forms of knowledge to teaching practice has been well documented by teacher education researchers such as Connelly and Clandinin (1988, 1999), Bruner (1985), Barone (1990), and Sconiers and Rosiek (2000).

14. The idea of a “personal religion” is a distinctively Western notion of religiousness.


17. This ambivalence about identity among colonized peoples has been documented and thoroughly analyzed in post-colonial literature by authors such as Gayatri Spivak (1988), Homi Bhabha (1994), and Audre Lourde (1984).


20. Thinking about nonmajority students in terms of deficits in their person, their families, or their home culture has a long history in our educational system and has often been supported by mainstream educational scholarship. For a thorough accounting of the different forms of “deficit thinking” and the
scholarly theories that have supported this unfortunate practice, see Valencia (1997).

REFERENCES


